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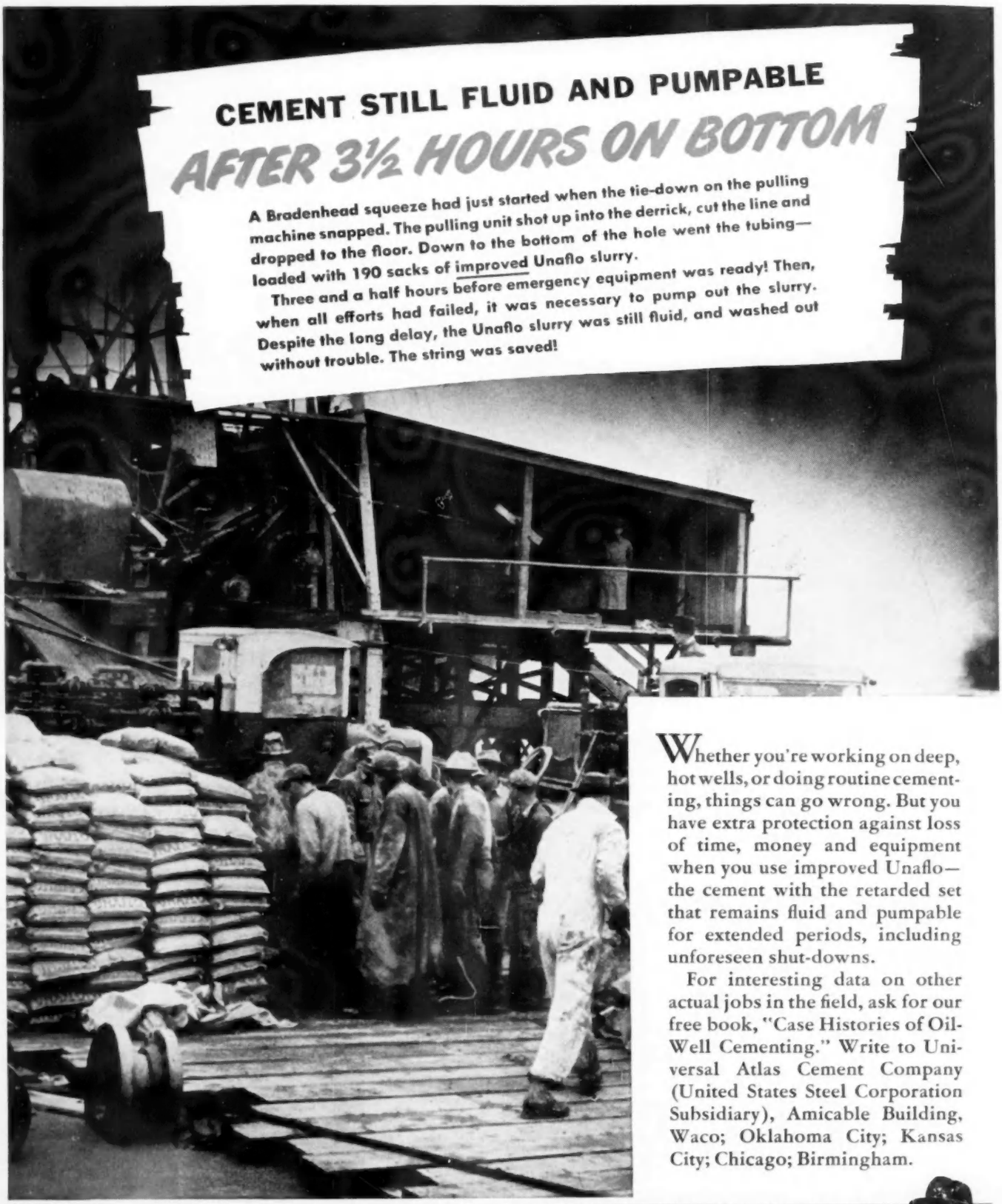

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LOOKING AHEAD
... with the Editor

THE oil fields of Alberta, Canada, are currently supplying an urgent war need, but the real prospecting opportunities for petroleum in our neighbor to the north apparently lie in the Mackenzie river basin. Certainly Western Canada offers a tremendous area for this prospecting and advantages of operation in Canada are many.

THE OIL WEEKLY in an early issue will set forth this situation in detail, including in its presentation the views of G. S. Hume of Ottawa, geologist for the Oil Controller of Canada who recently visited and spoke on the subject before several American societies.

THE OIL MAN'S CALENDAR

MAR. 8	Spring Meeting East Texas Chapter API, Kilgore Hotel, Kilgore.
21–23	American Association of Petroleum Geologists, Society of Exploration Geophysicists and Society of Economic Paleontologists and Mineralogists, Baker Hotel, Dallas.
22–23	Southern Gas Association, Roosevelt Hotel, New Orleans
23	Spring Meeting Pacific Coast District API, Biltmore Hotel, Los Angeles.
APRIL 3–4	Interstate Oil Compact Commission, Quarterly Meeting, Roosevelt Hotel, New Orleans.
10–12	National Association of Corrosion Engineers, Annual Meeting, Rice Hotel, Houston.
12–14	Natural Gasoline Association of America, Baker Hotel, Dallas.
13–14	American Petroleum Institute, Eastern District, Division of Production, Deshler-Wallick Hotel, Columbus, Ohio.
20–21	National Petroleum Association, Semi-annual Meeting, Cleveland Hotel, Cleveland.
24–25	National Oil Scouts and Landmen's Association, Hotel Adolphus, Dallas.
May 8–10	Regional Meeting, American Institute of Mining and Metallurgical Engineers, including Petroleum Division, Houston.
25–26	Spring Meeting, Mid-Continent District, API, Division of Production, Mayo Hotel, Tulsa.
OCT. 12–13	Texas Mid-Continent Oil & Gas Association, Houston.
NOV. 13–16	American Petroleum Institute, Stevens Hotel, Chicago.

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Important Announcement

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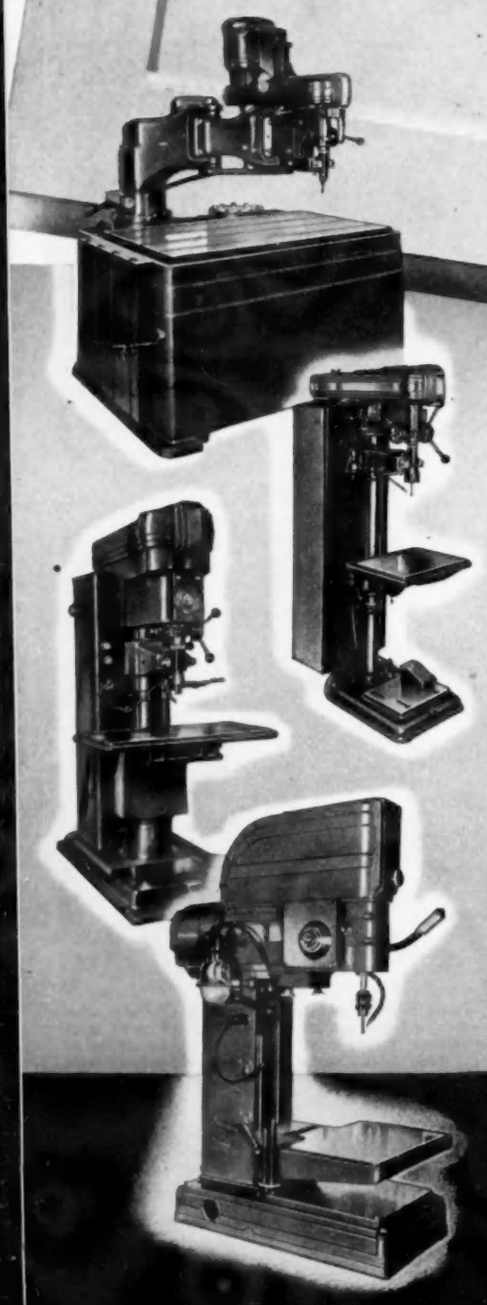

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The Changing Panorama

Who Doesn't Want A Price Increase?

OIL MEN should remember that there are some people in the United States who would like to create as much division within the ranks of the oil industry as possible, because a divided industry is comparatively an easy victim. That may be why from time to time someone starts the rumor that this major oil company or that is blocking or trying to block a crude-price increase.

Anyone who has taken time to read the oil papers or the newspapers should know that the matter of an increase in the price of crude oil is something on which there is unanimity of feeling among oil companies. Many of the major oil companies have gone out of their way to state their position in favor of a price increase and the attitude of the independent in favor of an increase has been militant. Yet from time to time we read or hear that this major company or that really does not want a price increase—despite its statement directly contradicting.

As a matter of fact, when we get down to brass tacks, we think that the most powerful influence in this country and probably the only powerful influence which does not want a price increase is the President of the United States. His antagonism toward the oil industry does not stop there. If left to him, or his leftist advisors, the depletion clause in the income-tax law, which is one of the most potent factors now operating to stimulate an increase in domestic reserves, would be stricken out or the percentage drastically out. Your guess is as good as the next person's as to why. But do not let someone with an axe to grind cause you to become a fomentor when strife within the ranks of the industry will aid the cause of its enemies.

The signs from Washington are that the oil industry is in for an investigation or a series of investigations. One can guess the purpose but no one can foretell the results. We certainly cannot afford to go into such a situation with one branch of the industry throwing brickbats at the other. Nothing would prejudice the industry's position more than its inability to stand firmly together. On the other hand, if the industry meets these investigations with sound arguments and a united front no harm should come from them.

Take It Or Leave It

By RAY L. DUDLEY, Publisher

PROBABLY there are more rumors about what has happened or is about to happen in the Near East (insofar as oil is concerned) as there are latrine rumors about where Lieutenant Jones will be sent next month.

If you want an earful, be it in New York, in Washington, Grayhorse, Oklahoma, or Bug Scuffle, Texas, all you have to do is to mention the Near East and cock an ear for reception. Of course not all of these rumors are founded on fact, and since some of them are directly contradictory to others, you can take your choice and lay your money on the basis of what you would like to believe. Remember, we did not make these rumors—we are just reporting them.

No doubt there is a sound reason for these many rumors. In the first place there are so many different groups interested in the matter that the air is full of worthwhile suggestions, and it takes only a few repetitions for a suggestion to blossom forth into a full-blown rumor as to what actually will be done. The oil companies already interested in the Near East, those who would like to be, independent operators who have their eyes on heavy imports, the State Department, Petroleum Reserve Corporation, Congress and the public itself, all know that the Near East holds possibilities affecting them all.

The whole matter will continue in the realm of present day mystery until some of the rumors have been washed out with a plain statement of fact.

So, because some of our readers may have escaped some of the rumors now flying thicker than March kites, we are going to serve up the following potpourri under the heading of a once popular game of chance now borrowed bodily by a radio sponsor who is among the few we know who has not yet circulated a rumor of his own on the Near East.

We do this with the written reservation that we do not believe them all, half believe some of them, hope some of them will prove true, and if you do not like our comments we remind you that you do not have to accept our valuation because this piece is not costing you anything extra this week.

1. Petroleum Reserve Corporation is going ahead with its plans to build a pipe line from Saudi Arabia to a Mediterranean port. It is already being talked about as being a *fait accompli*, which in political language means "it's too late for you to do anything about it."
   Could be true, but doubtful.
2. Petroleum Reserve cannot build the line without getting permission of the British government for it to cross British mandated territory.
   Not much doubt about this.
3. Britain is willing to give the permission for the line to cross her mandated territory provided the United States will lend-lease an 18-inch line from Kirkuk, Iraq, to Haifi, provide, through lend-lease, a line from Iran to connect with the proposed new Kirkuk line, which would parallel present Iraq pipe line, and provide, under lend-lease, materials for a 75,000-barrel addition to Anglo-Iranian Oil Company's refinery at Abadan, Iran.
   Three sources said this is a correct statement—we do not know.
4. The United States government, through Petroleum Reserve, is planning a 26-inch trunk line which will serve Saudi Arabia (where American interests seem to hold most of what is worthwhile), Kuwait, (where American interests, jointly with Anglo-Iranian Oil Company hold all that seems worthwhile), and Iraq, (where Iraq Petroleum Company—about three quarters owned by English and French interests and less than a fourth by American interests—already has large reserves proved up and from which the privately owned Iraq Pipe Line Company is carrying Iraq oil to European markets), and Iran (all British controlled). The story is that both English and American oil would be taken to market on a sort of pipe-line proration basis, since the properties served could produce a great deal more than the possible capacity of the line. We are not sure why the United States government should build the line and questions as to why it could not be built privately have been answered with the statement that the line simply could not be built that way. Since we are

among the great mass of American public who have not been let in on the secret, and our own private speculations have not yielded anything on this subject grading above bs and w, we shall reserve our own judgment until the powers that be tell us why we must substitute American dollars for diplomacy.

Might be some horse sense in at least a part of this one.

5. Petroleum Reserve Corporation is the only American governmental agency which seems hot about the United States spending the money and owning the line. Congress may meet the *fait accompli* angle with a suspension of P.R.C.'s banking account.
You read the papers too.

6. You hear considerable talk in certain quarters about the United States government purchasing certain important domestic oilfields (Elk Hills in California might be one, East Texas field might be another) and withdrawing their production from the market, holding these fields as war reserves against the possibility of a future war. The idea is that the operators would be paid for their properties on a fair basis, and that the American government accept through reverse lend-lease Iranian oil (control of Anglo-Iranian Oil Company, which has tremendous reserves in Iran and interests in other tremendous reserves in Kuwait, is owned by the British government) which would be imported to this country and used to take the place of the domestic oil withdrawn for future defense purposes, the proceeds from the sale of the Iranian oil being used to reimburse the domestic operators for their properties taken by the government. We have not heard how the details of this one would be worked out but we are reminded that back in the depth of the depression Robert Penn, an independent operator at Dallas, offered the suggestion that East Texas be bought by the government and set aside as a war reserve. Nobody thought there would be a war back in those days, and the American public had not become used to dealing in billion dollar increases in national debt overnight, so the matter received little more than scant attention. Now we are told, any suggestions relating to a foreign oil policy must take into account oil with which to fight the next war, date of which is set at 25 years from now. We have heard nobody say that Near East oil could be counted on in a war emergency. However, the plan involved in this paragraph of rumor would take Near East oil during time of peace and keep certain domestic oil where it would do the most good in time of war.
Very important, if true.

This Week's Absurdity: Congressman Voorhis of California (for this week, last week and as long as we have heard of him).

7. An International Oil Compact, or a World Oil Compact, may be suggested as a solution to our foreign oil problem. We have not heard as to whether it would be along the lines of the Interstate Oil Compact, or a sort of petroliferous League of Nations without sanctions.
Suggest keep this in mind. May be more about it in future.

8. We may shortly hear the pronouncement of an American foreign policy relating to oil which will assume the position that the American public and the American government have a stake in our government's lending its support to American oil interests throughout the world in their legitimate efforts to discover and develop world oil reserves. There is a great deal of study taking place on this subject, we are told, and we are assured that something of a definite nature is shaping up and that at long last American diplomacy is entering the field.
We hope this one is true.

9. Our State Department, says one rumor, is hung up on the question as to what is the British sphere of interest, the assumption being speculated on that maybe our State Department thinks that the Near East is an English sphere of interest. Talking about this rumor, certain irate citizens suggest that the petroleum advisor to the State Department study up on just what an American sphere of interest would be under present circumstances.
We would hate to believe that this is true and from what we have learned we do not believe that it is. It is only offered in order to include it among the many rumors we have met during the past ten days.

10. Petroleum Reserve has definitely given up the idea of acquiring a stock interest in an oil company or oil companies operating in the Near East.
True, we think!

Gasoline Use to Be Greater After War

IF THE war in Europe ends in 1944 and in the Far East by the end of 1945, total consumption of gasoline, including aviation, should reach a figure of 649.5 million barrels in 1946, which is only 6.5 percent under the pre-war peak reached in 1941, and due to greater passenger car consumption should rise sharply to an all-time high during 1947, according to C. L. Burrill, of the economic department of Standard Oil Company of New Jersey. Speaking before the annual meeting of the American Institute of Mining and Metallurgical Engineers, he predicted a 1947 gasoline consumption of 862.5 million barrels—24 percent greater than in 1941.

In addition to assuming termination of the European war in 1944 and the Far East war by the end of 1945, Burrill based his predictions on the following assumptions: (1) A substantial amount of facilities reconverted during 1945 to production of civilian goods including some passenger automobiles; (2) restrictions on gasoline consumption will be partly removed during 1945 and entirely removed by end of that year; (3) government control of petroleum prices and qualities will be removed by end of 1945; (4) gasoline consumption by passenger cars will not be seriously limited by the tire situation after January 1, 1945; and (5) tires will not limit truck and bus consumption after July 1, 1946.

On the above assumptions, Burrill predicts passenger car consumption will rise to 402 million barrels in 1946 (9.5 percent less than in pre-war 1941) and to 572 million barrels by 1950 (28.5 percent greater than in 1941). The largest increase is seen for 1947, when he expects 510 million barrels to be consumed. Exports of automotive gasoline are expected to decline steadily, as foreign areas become better developed.

Because farm savings have increased to highest levels in history, Burrill expects farmers to purchase larger than normal quantities of mechanical equipment, which he foresees as advancing agricultural consumption of gasoline from 25 million barrels in 1941 to 30 million barrels in post-war years.

Burrill expects increased civilian and commercial airline use of aviation gasoline nad larger exports during 1946 and 1947 to offset the decline in military use, and therefore foresees total demand for aviation gasoline as being 29.5 million barrels in 1946, 24 million barrels in 1947, and 36 million barrels in 1950.

Changes in PAW Would Effect Great Improvement in Oil Industry

More autonomy needed in district offices where much time could be saved operators; other constructive suggestions result from survey which shows belief that personnel reduction is advisable

By A. R. McTEE, Staff Writer

SINCE Petroleum Administration for War is admittedly an agency set up to accomplish certain things in the production, refining and movement of oil in a war emergency, and we have the word of its administrator that insofar as he is concerned it will not be continued after the war, the question has arisen as to whether it could function more efficiently if its activities were revamped, and in the mind of many oil men the thought has come to open expression that as needs for some of its activities draw to a close, those activities should draw to a close also.

In its issue of February 14, under an editorial headed "Red Light," THE OIL WEEKLY expressed the opinion that elimination of PAW at this time would be most unfortunate in its effects on the country and the industry, but did suggest that possibly the functions of PAW could be better accomplished, if some of the lessons learned thus far be applied to the remaining days of the agency, and if its work was revised to fit changed conditions.

Therefore, with the thought in mind that a study of some of the efforts of PAW might lead to some constructive suggestions, operators and PAW officials were contacted to see what improvements in PAW practice were possible. This article is the result of that study. While the survey was made in District 3, most of the findings apply to all districts, except District 5 where autonomy has been granted.

A definite change in feeling toward some divisions of the agency is taking place within the industry, directed largely toward the relaxation insofar as is possible of certain of the rules. This attitude is aptly expressed by The Sun Oil Company in its annual report for 1943. "The Petroleum Administrator for War, Secretary Ickes," the report says, "is entitled to high praise for his understanding and cooperative attitude toward the problems of the industry and we take great comfort in his repeated promises that as soon as peace comes the government will free the industry from its wartime restriction. Pooling of certain efforts and facilities, required by government wartime directives, has had the effect of lessening competition within the industry. While this may have been necessary in the war effort, it is not normally in the best interests of the industry or the public. In fact, it is doubtful whether it has been in the best interest of the war effort, for the petroleum industry has always done its best when engaged in healthy, intelligent competition. *Many within the industry believe that the time has now arrived when the competitive spirit should be given a freer play in order to spur on each unit of the industry to do a better job than the others in the war effort.* The industry, by and large, wants no relaxation of the anti-trust laws or any immunity from either the spirit or intent of this legislation, either now or in the postwar period. *On the other hand, it does not wish to remain under governmental decrees or directives governing its internal operations one day longer than is necessary to win the war, and it feels that it has demonstrated its ability to serve the country best when it is free of unduly burdensome restraints.*"

That the time has arrived when the PAW organization might well be skeletonized as to divisions and personnel and still retain all the authority and staff needed to accomplish its functions, is a belief common among men in the industry. This is held particularly true of the Production Division. By further decentralization and extending greater autonomy to the different districts, as has been done so satisfactorily in California, the Washington staff could be greatly reduced without impairing its effectiveness, thereby freeing many capable executives badly needed by their respective companies. District offices already have their organizations and personnel, and could handle most of the decisions resulting from further decentralization of power without consulting Washington, and also without adding to the number of their employes. Paring down certain divisions would also result in reductions in the district office forces, thus again making badly needed men available to the oil companies.

As was pointed out in THE OIL WEEKLY of February 14, district autonomy in California is getting the job done and has worked so well to the "great advantage of all concerned, that it rates the envy of other districts." The increase in California drilling last year resulted in the greatest number of wells completed in any previous single year except 1924. Moderate crude oil price advances applied in California especially during the first quarter of the year also acted to stimulate drilling. But getting rid of the "remote control" by Washington was by far the most important factor contributing to the substantial gain in drilling.

The same benefits realized by California, namely elimination of a mass of paper work and relaxing of spacing regulations are sorely needed by the other districts. Granting that California is a special case in some respects, it is still difficult to see why the same degree of independence exercised by operators there would not facilitate operations elsewhere. The need of "additional author-

Of Constructive Value

Mr. McTee's article appearing herewith is the result of an investigation made of oil-industry opinion as relating to improvement of PAW's Production Division operations. It is not offered in a spirit of criticism, but on the contrary is offered for its constructive value.

It seems to us that most of the things suggested are reasonable and can be accomplished. There may be some difficulties attached to some, but on the whole, the powers that be in PAW might well give serious consideration to them.—THE EDITOR.

ity, so that problems . . . can be more intelligently, more practically and more speedily dealt with than from Washington," has certainly extended itself to other districts now, if it did not exist at the time California was put on a special basis.

It is becoming increasingly apparent that certain regulations of PAW are "burdensome restraints" to the industry, and that their continuation only increases the burden at a time when it might well be eased. Steel pipe for drilling involves a case in point.

If sufficient steel has been allotted to drill the 24,000 wells asked for by PAW, and the over-all steel situation is satisfactory, why should it longer be necessary for operators to continue to have to make formal applications for steel with all the red tape involved? What cause is being served by such procedure except delay? Why not do away with that part of PAW having to do with this material and allow operators to go ahead and buy as in normal times and get at the drilling as rapidly as possible?

A good many operators have reached the opinion that the method of applying for steel by estimating needs so long in advance, is of little real value anyway. For instance, it is claimed that in many cases the estimate is no good by the time it reaches Washington. If a wildcat well strikes, then a whole new area is opened for development, and the old steel estimate no longer applies. The operator has to start from scratch on a new estimate if he contemplates developing the field, and shut down his activity until action can be taken on his application.

The present cumbersome practice of handling applications for exceptions to spacing rules could well be improved. The suggestion has been made that in District 3, in those states where there are state laws regarding spacing, and where there are state regulatory bodies, permits to drill granted by state regulatory bodies be recognized as sufficient grounds for the acquisition of needed drilling materials. It is suggested that exceptions to state spacing rules be certified by the state regulatory bodies to the district PAW headquarters accompanied by record of evidence on which such exceptions are recommended, and that those headquarters be empowered to grant or deny the application for exception without referring them to Washington. A great deal of complaint has been made on delay occasioned by referring such matters to Washington.

On the other hand fear has been expressed that a complete return to state control might mean, through unwise exceptions, a return to indiscriminate drilling which would waste steel. The suggestion that exceptions to state rules be passed upon by the district PAW would eliminate this objection, as well as the delay occasioned by referring such matters to Washington.

State laws have already been based upon the problems peculiar to each state, argue some who point out that California was badly tied up until control in spacing was left to those more familiar with local problems than the PAW staff in Washington.

It seems almost unthinkable that an operator should have to ask permission from PAW to burn his own gas as fuel under his own boiler furnishing power for a drilling outfit, yet this is the case. Such permission usually is granted by the local district office, but even then, it is hardly consistent with the broad scope of PAW to think that valuable time has to be wasted on such details.

The regulations governing gas and condensate wells might be revised to advantage of operators. If an operator is drilling for oil and so states in his application for an exception and happens to strike gas, he cannot produce the well as a gas well. Instead he has to shut the well in, apply for an exception to produce gas (even though the well is already drilled), hold everything if he can, until the exception is granted. In an instance cited, three months were required to secure the exception.

Again, the restriction on producing gas condensate wells seems inconsistent with the general situation. The need for 100-octane gasoline is increasing constantly. Hence the amount of condensate required is correspondingly great. Why an operator should not be allowed to produce such a well if he has a market for his product including gas is a question that needs answering. In Texas, the railroad commission takes care of the problem by denying the right to produce condensate unless a market can be proved, in which case the operator can go ahead and produce according to proration orders. Permitting the states to control such completions would simplify the difficulty now confronting operators, and also be of immediate help in maintaining an adequate supply of condensate.

The prohibition on deepening old wells appears illogical. This type of operation calls for the smallest amount of steel of any other drilling activity, and it is difficult to see why the regulation should not be lifted.

A few consolidations have already taken place in PAW. Combining the crude oil and petroleum product supply and transportation functions into a single Supply and Transportation Division recently, aims to assure the most effective disposition of stocks. The petroleum reserves division has been absorbed into another division. Also an expanded Distribution and Marketing Division has the responsibility for distribution of available products from supply terminals to distributors and consumers.

"The realignment," according to Deputy PAW Administrator Davies, "is designed to bring a closer coordination of the important inter-related functions of supply and transportation to enable PAW to deal most effectively with the increasingly acute petroleum shortage problems throughout the United States. Supply and transportation are closely related functions which are, of course, concerned with every branch of petroleum operations. A long-time study of the war problems and activities made it apparent that a combination of the two under a single direction will be better aid in meeting these problems." These changes, however, involved no reduction in staff or in work required of oil companies. All personnel of the separate divisions were included in the new combinations.

Various modifications and adjustment in regulations have been made from time to time affecting the Production Division. However, none of these, except the granting of local direction to California, have been very far-reaching in their general importance. Changes have usually been local and have applied to districts of negligible importance. Even the so-called decentralization plan whereby authority was delegated to directors of certain districts lacked in comprehensiveness; and authority delegated was in a sense "authority" in name only.

Summed up, following are suggestions offered THE OIL WEEKLY in its contacts with the industry:

Return spacing regulations to state regulatory bodies in states where there are such bodies and spacing laws, with the provision that exceptions to state spacing laws be certified by the state regulatory body to the district PAW, the certification being accompanied by a record of evidence on which exception is granted, with the district officials of the PAW having authority to grant or deny applications for such exceptions.

Ease the red tape in connection with acquisition of tubular goods and other necessary equipment.

Stop discouragement of deepening wells.

Eliminate the hurdles on using gas for drilling fuel.

Conceive a more practical approach to the matter of condensate or gas wells unexpectedly discovered.

Reduce the department personnel down to fighting trim, eliminating unnecessary work and personnel.

Eliminate some departments entirely. Facilities and Securities Division appears to be one for which no need now exists.

Eliminate all possible reports and red tape which is taking up the time of oil men who could well be putting their time to more constructive work.

Persian Gulf Oil Furnishes Good Backlog for U. S. Reserves

PRC's actions including Middle East pipe line does not constitute government's "sneaking into the oil business"

By HAROLD L. ICKES, President, Petroleum Reserves Corporation

WHEN THE OIL WEEKLY asked me for a brief statement on foreign oil, my ability to say "yes" gave me a sense of relief that can be understood only against the background of the necessary secrecy under which I have had to operate over the last months. During these months, many and varied rumors have budded and been frostbitten. "The government was taking over the oil business." Or, "the government was selling out to the oil industry." Or, maybe it was a mixture of the two. Speculation ran wilder than scuttlebut in the Navy. And yet there was nothing that I could do but sit quietly and hold my peace. The negotiations that were in progress could never have been consummated otherwise.

Now that the negotiations have been concluded, I can speak. And, now that this is the case, I want to say at the beginning that I speak with the pride of one who feels that he has had a part in doing a praiseworthy job, and not in any sense with the embarrassment of one who feels that he must defend a blunder or a sin. So, I am glad to discuss this foreign oil matter, and specifically the Petroleum Reserves Corporation. In so doing, I propose to be factual and realistic, leaving emotionalism to others.

In considering PRC and its activities, one must first regard our domestic oil position, because if we knew that we had beneath the surface of our own soil all the oil that we ever could possibly need, there would be no point whatever in concerning ourselves with oil across the seas. But we have no such comforting assurance. In a nutshell, our domestic oil position is this:

The most generally-accepted estimate of our known domestic crude oil reserves is about 20 billion barrels. At the present rate of consumption, that is something less than 14 years' supply—if we could get it all out of the ground within that time, which we could not. This situation would not be disturbing if we were discovering new oil in volumes sufficient to offset our present production, but we are not doing so. Since 1938, our discoveries of new oil—not including extensions and revisions of previously-discovered fields—have been very substantially less than our production. Every oil man knows this. In other words, our crude oil bank account is diminishing every year, and this is true whether our known reserves are 20 billion barrels as most people say, or 30 billion barrels as some people think, or 50 billion as few people hope.

Right today, we know that we are able to fuel and lubricate our great and growing military and naval machine only by imposing upon the public a degree of rationing which causes not only inconvenience, but actual hardship and economic distress. This is true with reserves of at least 20 billion barrels. Now, if we continue to produce oil faster than we discover it, it is perfectly obvious that our reserves are going to be a great deal smaller if another war comes, in 15, 20 or 25 years. Yet, isn't it perfectly obvious that the oil demands in this next war—if it comes—are going to dwarf those of World War II, just as present demands have made insignificant those of World War I? Of course, we hope that there will not be another war, but we have learned from sad experience that we just can't afford not to be ready if one should come.

To me, all this means that we had better start right now to give some heed to our crude oil future. We must assure ourselves of an oil supply, not only be developing our domestic resources, which we hope may prove fruitful, but by assuring ourselves some rights in sources beyond the sea, which we know to be fruitful.

Persian Gulf Situation

These considerations constitute the background for PRC's activities. The specific situation which led to its creation was that in the Persian Gulf region, particularly in Saudi Arabia, where the oil fields are held jointly by Standard Oil Company of California and The Texas Company; and in Kuwait, where Gulf Oil Corporation and Anglo-Iranian each have 50 percent interest in a British corporation holding the concession.

The Kuwait fields, with proved and indicated reserves of about 9 billion barrels, are now shut in. The Saudi Arabian fields, with 4 to 5 billion barrels of proved and indicated reserves, are now producing about 35,000 barrels a day. By contrast, there is now a net daily withdrawal of about 275,000 barrels daily from the British-owned fields of Iran, and about 90,000 barrels daily from the fields of Iraq, 95 percent of which are owned, 23.75 percent each, by Anglo-Iranian, the Royal Dutch Shell group, a French group, and the Near East Development Corporation, which is owned by Jersey Standard and Socony-Vacuum.

Standard of California, Texas and Gulf have experienced serious problems, including inadequacy of transportation and refining facilities, and have had to draw upon their resources in order to pay royalties and expenses. Their production has not been sufficient to offset their costs. On the other hand, the British-controlled companies or groups have had active support by the British government. We in government discussed the situation early last year with the presidents of the California and the Texas companies and determined after a thorough study of the situation, that assistance should be given to the companies in the interest of the United States.

PRC has undertaken only one project so far: the construction of the 1200-mile pipe line from Saudi Arabia and Kuwait to the Eastern end of the Mediterranean, one consideration for which is that the companies will set aside one billion barrels of oil for the military services of the United States. I say without hesitation that I consider the agreement effected by PRC with California, Texas and Gulf to be one which cannot be challenged from the point of view of financial soundness.

Building of the pipe line will cost between $130,000,000 and $165,000,000, all of which will be repaid to the government by the companies within 25 years—with interest and a net profit—after which the government will still own the

pipe line. This repayment will be guaranteed by the companies. The companies agree to maintain the billion-barrel reserve for the military services of the United States, making the oil available whenever requested at 25 percent below the market price, either at the Persian Gulf or in the United States, whichever is the lower.

Emergency Reserves

The companies agree not to sell any crude or products to any government or person whom the State Department disapproves. In brief, the government is assured of substantial oil reserves against a future emergency; the companies are given greater financial and operational security; and both sides will benefit financially.

During the negotiations, when secrecy was of prime importance, one of the favorite rumors was that the government was sneaking into the oil business. I feel certain that, now that the agreement in principle has been made public, no fair-minded man will continue to make such a charge. I have no wish to put the government into the oil business. The furnishing of a facility, without which the companies cannot get out their oil, is not putting the government into the oil business. The building of another facility—the Panama Canal—did not put the United States into the transportation business, and no one has ever been so foolish as to assert that it did.

I do not know of any responsible government official who does. I have the greatest admiration for the American private oil industry, and for the foresight and daring which has characterized its operations abroad. I say without mental reservation that, wherever private industry can retain and expand its holdings and business, I have no thought of suggesting that the government offer its aid. But I know, and leaders of the oil industry know, that there are now and will hereafter be situations in which they will need both encouragement and assistance from their government—at least until such time as there is some kind of a world agreement which will promote the security of peace-loving nations.

As for the possible competition of Persian Gulf oil with domestic crude, I see no reason to believe that oil from those foreign fields will be brought into the United States within the near future. But when the time comes that our domestic crude is no longer sufficient—whether that be in 15 years, or 25 years—I believe that it will be comforting to know that we have an available supply elsewhere. Then the oil industry itself will be the first to advocate a policy of supplying our own people with the oil that they must have, even if it comes from abroad.

PIWC to Take to Public Its Fight With PRC

Council says Arabian pipe line violates Atlantic Charter; principles laid down for building United States oil policy

THE PETROLEUM Industry War Council last week carried its fight against Petroleum Reserves Corporation and its Middle East pipe-line project to the American public after debating and approving a preliminary report of its national oil policy committee and a resolution condemning the project and reiterating its demand for dissolution of PRC.

The double-barreled subject of PRC and national policy was the major matter of discussion at the PIWC March meeting, at which Administrator Ickes made two personal appearances, the first to discuss the Saudi Arabian pipe line and the second to trade epithets with James A. Moffett, former Standard Oil Company of New Jersey and Standard Oil Company of California official who, from New York, had demanded his resignation.

Ickes later encored his views on Moffett before an appreciative press conference, calling him a "playboy" and giving his own version of Moffett's connection with the oil industry and his alleged attempts to take over the Oil Administration under the NRA and more recently to oust Ickes as petroleum coordinator.

Outlining the one-time Federal Housing Administrator's changes of occupation in the oil industry, Ickes called him "a great little resigner."

Ickes drew a distinction between Moffett's attack and the opposition of PIWC to the Middle East project, declaring the latter to be "an honest difference of opinion." He admitted that the oil industry as a whole is against the project and told reporters that the council had made public its resolution of opposition after conferring with him and with his consent.

Claims No Breach

"I do not think there is the slightest breach between the War Council and myself, either personally, as Secretary of the Interior or as Petroleum Administrator—in fact, they said so," he declared.

The administrator said that the line will take two years to build, but that he considered it beneficial both for the war program and for the future, and asserted that the reason for its approval by the joint chiefs of staff of the Army and Navy had been the desire for a source of oil in the event of a future war.

Whether the United States could hold the pipe line in the event of war, he admitted, depended upon the line-up of the contestants but, he added, "you have to take a chance."

He challenged the charge that the pipe-line project was getting the government into the oil business, comparing it with the Panama Canal, which he said is merely a facility for transportation, and contending that the carrying of oil by the railroads does not put them into the oil business.

Ickes refused to respond to a question why, if the line was a good business proposition, the companies would not build it themselves.

No other projects are pending before PRC, he said, denying reports that it is considering a 20-year program of development in Mexico or the construction of pipe lines in that country.

So important did the council consider the whole subject that Chairman William R. Boyd, Jr.; John A. Brown, chairman of the oil policy committee; George A. Hill, Jr., who wrote the report, and Ralph Zook, president of the Independent Petroleum Association and member of the committee, held the first press conference ever called by PIWC, revealing the whole story of the industry's futile efforts to find out just where PRC fitted in and the fears entertained that the Middle East pipe line is only the first move in the direction of federal competition.

They charged that the PRC program is in defiance of the Atlantic Charter, the Moscow and Teheran agreements and the Cairo declaration, and intimated that the project hints of fears in Washington of British resistance to the spread of the American oil industry abroad after the war.

PRC has picked the "most explosive area" in the world for its initial foray into the oil business, it was declared.

The oil group pointed out that PRC was set up on the last day on which the President had authority to establish war agencies under the RFC act, that it has a life of but two years under that act, but is engaging in a program which will run 50 years, and that it is setting out an international oil policy in the face of organic vestment of such authority solely in the President, to be administered only by the State Department.

Three Principles

In its report, which was adopted without any dissenting votes and with the representatives of the three companies involved in the RFC project and the Shell not voting, the oil policy committee set forth three basic principles which, it said, must guide the building of a national oil policy adequately serving the public interest, as follows:

"*1. Oil Finding:* Continued vigorous,

intensive venturing of capital to keep up the search and to find oil is the most important basic necessity for the future oil production in the United States. Such effort can be carried on effectively only by private-venture capital based upon a sound and profitable large-scale domestic oil industry. Without such continuous oil-finding effort on a large scale, all other possible policies are without serious significance in promoting our future progress in oil. Every proposed policy which may weaken this effort should be rejected.

"2. *Oil Production:* The oil producing states of this country have during the past 15 years gradually developed the practice of producing oil in accordance with sound engineering principles intended to avoid waste in recovery and, by laws of the various states, this principle has been extended to avoid waste in storage above ground by limiting production within sound engineering practice and within available market demand. Those principles of production are referred to as producing in accordance with the optimum-rate and, we believe that optimum-rate production is the key to sound conservation practices and efficient oil field operations.

"3. *Government Attitude:* (a) Government would encourage the petroleum industry to assume risks inherent in oil finding and production by minimizing such risks so far as possible.

"(b) Government should not invade the province of industry either by participating with industry in operations or by itself entering into any phase of the business.

"(c) As the public interest is protected by law from monopolistic practices and anti-social activities on the part of business, so the public interest should be safeguarded from the disruptive effects of improvised policies on the part of government that may have narrow or short-sighted objectives. Some of these safeguards can be provided by the principle of government and industry consulting on all actions having to do with policy.

"(d) A dynamic factor that has made it possible for the industry to grow so consistently in the face of repeated predictions that we were running out of oil, is the development of technological methods in every branch of the industry. This technical progress is the result of competitive research within the industry and constitutes one of the great American achievements during the past quarter-century. Instrumental in promoting this invaluable asset has been the general policy of making new developments available for license on reasonable terms. It is vital to our future growth and development that such processes be encouraged rather than discouraged as they would be by proposals for governmental domination of research, emasculation of our patent system, or entry by the government into competitive research in fields where private research is adequately covering the ground.

"The search for oil is best promoted in an atmosphere of competition and confidence, to which is harmful any threat of governmental interference and frozen price, limited materials and manpower, all of which now exist," the committee held.

Production of crude on a conservation basis provides at minimum cost a natural reserve available for immediate expansion in an emergency, but stockpiling of crude and products in sufficient volume to be of importance for national security is impracticable.

High Cost of Storage

It was pointed out that stocks needed by a war economy could be stored above-ground only at an incredible cost, it being estimated that to store over 2 billion barrels—a 4-year supply at the present rate of requirements — would cost 8 to 13 billion dollars if held for 20 years, and stocks which might be turned loose on the industry at any time would be a continuous threat to the oil economy and discouraging to further search for oil.

The importation of oil to be pumped into depleted fields in this country also is impracticable, since it would not be quickly recoverable for emergency use and a substantial portion would be lost in the sands, it was held.

Similarly, the council was told, to lock up proven reserves by cutting back production or by government purchase or condemnation would also be harmful to a vigorous industry.

On the other hand, the committee urged, the public lands should be kept open to private development and the present Naval Reserve acreage should not be increased and imports should be handled in an orderly and flexible manner.

Easily accessible foreign reserves in friendly nations and owned and operated by our nationals offer the greatest possible help for emergency needs, and the national security and economic stability can be greatly enhanced by adequate world oil developments under private initiative, it was declared.

The conclusions of the committee were that:

"1. The public interest in oil can best be served by a vigorous, competitive industry, guided by private initiative.

"2. Our oil future cannot be charted in advance and our best procedure is to maintain a vigorous, dynamic industry competent to meet the problems as they arise and able to create new approaches though dynamic action.

"3. The domestic industry needs no further federal administrative machinery.

"4. The operations of United States nationals in foreign fields need diplomatic support and machinery for international consultation.

"5. The United States government should develop, deliberately and only after mature study, an oil policy, both domestic and foreign, based upon experience, knowledge and insight."

Making public the committee's report, Boyd emphasized that there is no difference between PIWC and PAW and that the industry is supporting the latter 100 percent, and that the whole attack is aimed at PRC.

The council added its voice to others which have criticised the proposed Middle East pipe-line project, and in a resolution adopted after hearing Administrator Ickes' views, denounced it as against the interest of the American people and the oil industry and demanded that final definitive contract not be consummated and that PRC be dissolved.

It was pointed out that announcement of PRC's plan was made within two days after the February meeting of PIWC, at which a resolution was adopted opposing government entry into the oil business, and that the Secretary of the Navy, within the past few days, has indicated an intention "to find additional projects for commitments by our government not connected with this war, commitments and involvements of this nation in foreign countries, through the medium of PRC, without any relation between such projects and the carrying on of this war."

The council decided that, contrary to claims, the project will not result in the acquisition of any new oil or reserves for the United States, nor make accessible any oil not already accessible, and that it is not a project related to the winning of the war.

All that the pipe line will do, it was declared, will reduce the cost of transportation by less than one-half cent per gallon.

In its resolution, PIWC specified eight major objections as follows:

"1. Although the PRC, which will construct and maintain the pipe line, was created under the war powers of RFC, the project cannot be considered a war measure because it is unlikely that the pipe line can be completed and in operation before the termination of the present European war.

"2. The agreement will put the United States government directly into an international transportation business in the Middle East, as owner and maintainer of the pipe line, and the United States government will declare in the contract that it will promote and protect the interests of the governments of the territory traversed, entirely without reference to the future nature or jurisdiction or policies of such governments and without reference to existing spheres of influence which may be claimed by other countries.

Reserve Called Meaningless

"3. The optioned reserve of one billion barrels of oil in the Persian Gulf fields controlled by American nationals is meaningless, because in times of war or other emergencies all the oil produced by American companies or citizens anywhere in the world is available to the American government if it can control the necessary transportation routes to the desired destinations.

"4. Adjoining nations may well consider that the United States government has taken direct action to increase the Arabian output as against their output of petroleum and will demand, and probably obtain, increased transportation facilities for their production. It must be remembered that the national revenues of these nearby countries are largely dependent upon the amount of their crude oil which can be currently exported.

"5. The contract assumes, if it does not commit the United States and its nationals to, marketing a large additional amount of oil to be produced from the Persian Gulf fields in competition with other world sources of supply. It will have a serious effect on exports from South America, and the United States, and may create ill-feeling with our South American neighbors. If such a result arose from private-company action, these countries could not feel aggrieved but when their economics are adversely affected by direct and unnecessary action on the part of the

■ CONTINUED ON PAGE 53

Water Flow Chart for Designing

IN THE design of gathering lines for salt-water-disposal systems, it has been common practice to avoid all unnecessary calculation by resorting to the use of various tables to determine the pipe size, head loss due to friction, or capacity of the lines. The majority of these tables are calculated in gallons per minute and their use involves conversion of volumes to barrels per day as well as interpolation. The accompanying chart was developed to eliminate these calculations by: (1) the use of barrels per day as a volume basis, and (2) graphical presentation of this data so that interpolation is not necessary.

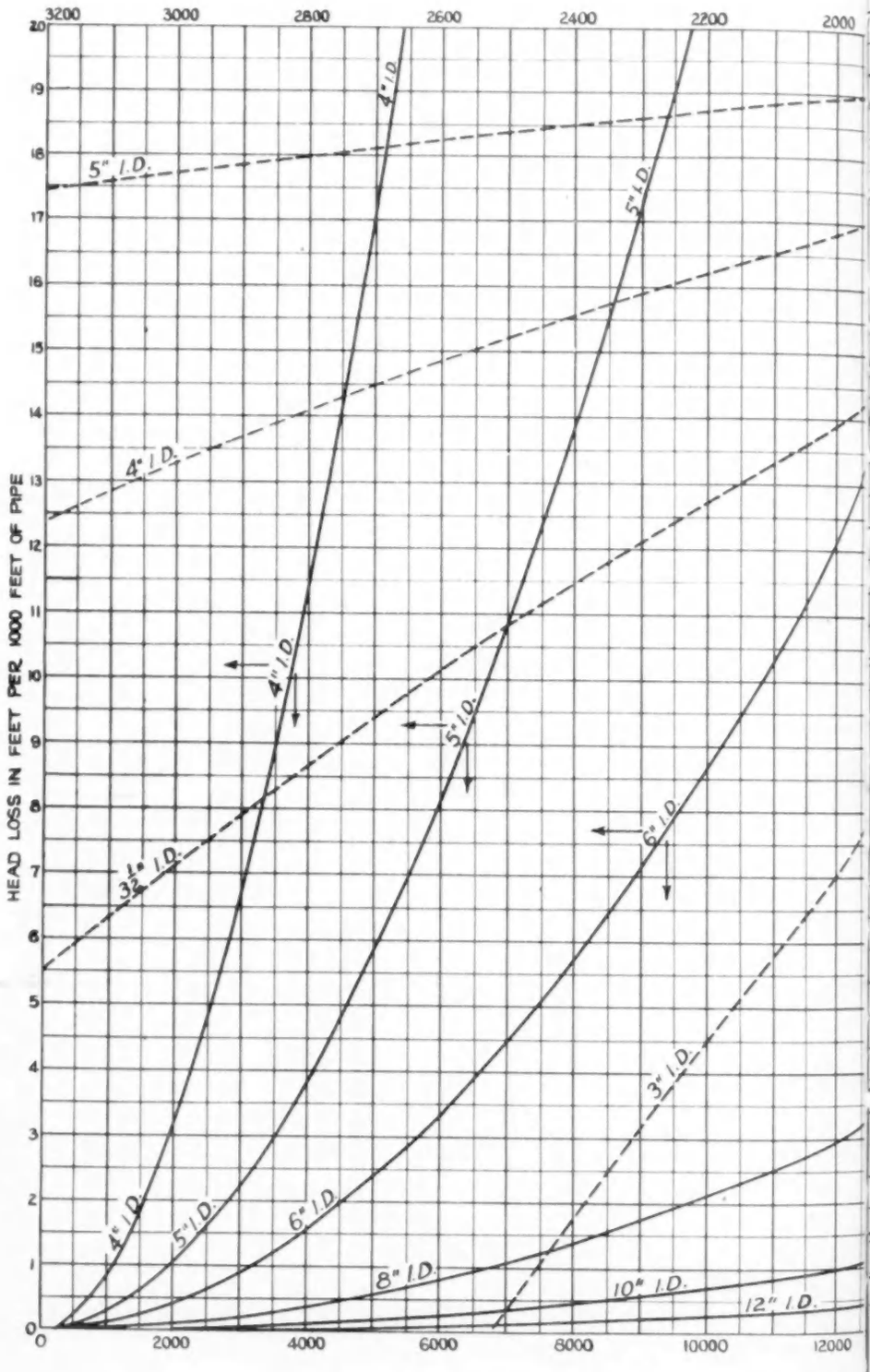
This chart is based on the Hazen-Williams formula which was rearranged as follows:

$$h_f = 1000 \sqrt[0.54]{\frac{v}{1.318\, c\, r^{0.63}}}$$

where h_f = loss of head due to friction in feet per 1000 feet of pipe
v = mean velocity in feet per second
c = Hazen-Williams coefficient of roughness
r = hydraulic radius of pipe in feet

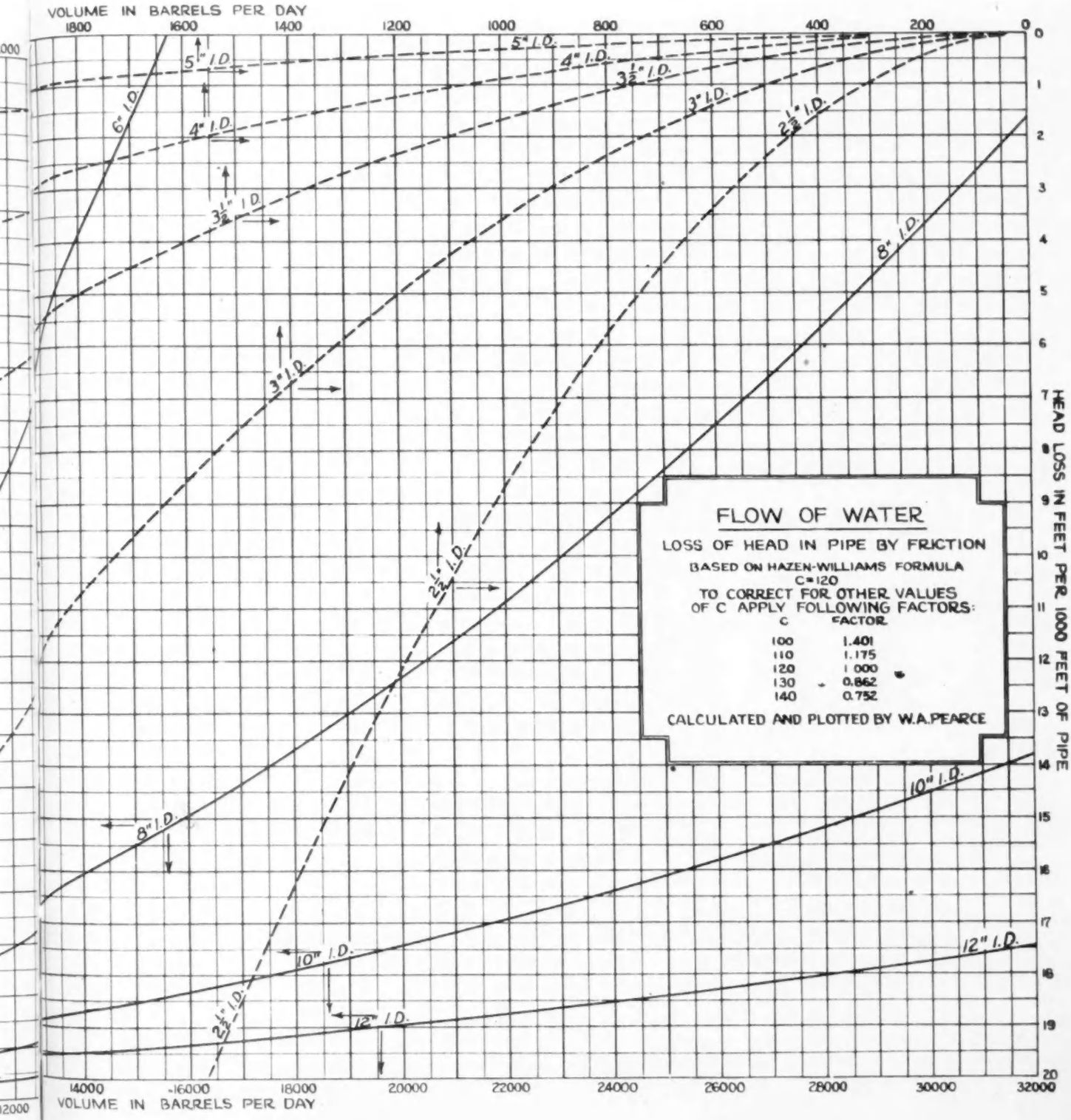
Although a roughness coefficient or "c" of 140 to 150 is claimed for asbestos-cement pipe, the material commonly used in modern salt water gathering lines, in order to allow a reasonable factor of safety this chart was constructed using a value of c = 120. However, conversion factors from this value of "c" to other values from 100 to 140 are given.

The chart is very simple to use. For pipe sizes from 4 inch I.D. to 12 inch I.D. the solid lines are used, reading the head loss on the left-hand scale and the volume on the lower scale. For pipe sizes from 2½ inch I.D. to 5 inch I.D. the dotted lines are used, reading the head loss from the right-hand scale and the volume from the upper scale. Thus, given an allowable head loss of 3 feet per 1000 linear feet of pipe, and with a volume of 10,000 barrels per day, at least an 8 inch pipe would be necessary. Conversely, with a volume of 10,000 barrels per day flowing through an 8 inch pipe, the head loss would be 2.13 feet per 1000 linear feet of pipe.



By W. A. PEARCE
Republic Natural Gas Company

Salt-Water-Disposal System



Illinois Oil Sands Found Suitable For Artificial Water Flooding

By FREDERICK SQUIRES and ALFRED H. BELL

A Synopsis of Report of Investigations No. 89, Illinois State Geological Survey, Urbana, Illinois

THE best evidence that Illinois sands are suitable for artificial flooding is the increased production due to accidental floods which has been observed in many localities. It was from observation of the favorable results of accidental floods that Bradford, Pennsylvania, operators started the practice of artificial flooding with well known success. There have been several applied floods in Illinois, the favorable results of which are described as further evidence of the advisability of the practice.

The latest flooding operations in Illinois have taken advantage of the improved technique developed in Pennsylvania and practiced there and in Oklahoma and Kansas. These improvements are said to produce three times the oil obtained by accidental floods in comparable areas.

Natural Floods

In comparison with other oil states, Illinois oil sands produce large volumes of water. In most of the pools edgewater is encroaching. The encroachment varies in intensity from such areas as the Sandoval and Buchanan, where water pressure was evident in every new well in all parts of the field, through the Dennison Township McClosky, where there was a considerable time lag between drilling and water invasion in the northeastern part of the field, to such sands as parts of the Robinson where the lag is so long that it does not affect production noticeably during the entire normal life of the wells.

Probably all Illinois sands are under some degree of edgewater pressure. Starting with this assumption, it is obvious that the removal of any of the oil or gas starts a more or less widespread motion of the remaining fluids—gas, oil, and water. Such motion is often shown by an increase in the water production from the wells nearest the water-oil contact, resulting sometimes in the abandonment of such wells and an increase in pumping time of the next row of wells. As nothing is removed beyond the oil-producing boundaries and as oil and gas are being withdrawn from within the boundaries, reservoir pressure will be greater in the surrounding water and less in the included oil and gas area, causing an inward movement of water on oil in an effort to reestablish equilibrium. This movement will be indicated by higher columns of fluids in temporarily unpumped wells at the water-oil boundaries as compared with similarly resting wells within the oil-producing area. The comparative heights of such fluid columns show the direction of the water movement.

Realizing that the above conditions exist, the survey has developed the following technique for the study of flooding by edgewater encroachment.

A map is made of the pool, showing well locations and lease boundaries. Then a structure map, showing the elevation of the top of the producing sand in question, is prepared. The third step is that of showing by contour lines wells that were abandoned on the same dates; this is supplemented by a map on which contour lines show wells having equal pumping time, which indicates approximately equal amounts of fluids produced. The fourth step is the measurement of fluid levels in standing wells and the preparation of contour maps to show levels of equal heights. These contour maps indicate the direction of the advancing water.

Complete production records are obtained and the relative yields are mapped to test the effects of flooding on oil yield. Graphs of production indicate the time at which the effects of flood water were first felt and the resulting curves show their extent. Contours are drawn showing wells of equal initial production, which indicate the relative permeabilities of different parts of the pool after allowances are made for differences in dates of drilling.

When this preliminary study has been made, conclusions are drawn as to the source of the flooding water, the extent of the flood, the direction it has taken and will take in the future, its rate of flow—past, present, and future—and most important, the effect of the moving water on the amount of oil produced.

The investigations of edgewater encroachments cover the following areas: Partlow, Flat Rock, Buchanan, Dennison Township McClosky, Applegate McClosky, and Sandoval, all in Illinois, and Oakland City in Indiana. In less detail are described the Murphy, Dupo, Carlyle, Parker, and St. Francisville floods in Illinois.

Applied Floods in Illinois

Purposeful water flooding has long been successful at Bradford, Pennsylvania, and Bolivar, New York. More recently, the shallow sands of Oklahoma and Kansas have been flooded to increase production. The Berea sand in Ohio has been worked with good results and considerable work has been done in Texas. A flooding operation is under way in West Virginia.

Illinois has presented evidence, by the results of edgewater encroachments and accidental floods, that the process will be successful here.

To date the only applications of these lessons in Illinois have been made in two operations on the Robinson sand, one on the Cypress sand, one on the Bethel sand, one on the Biehl sand, and two on the Gas and Siggins sands.

Water has been introduced from the surface under controlled conditions into the Robinson sand in Crawford County on the Kraft and Drake-Stifle leases, into the Cypress sand in the Carlyle pool in Clinton County, and into the Benoist sand at Sandoval. The Biehl sand in the Allendale field in Wabash County has been purposely flooded from below the surface with salt water from upper sands. Two important operations are under way in the shallow areas in the Parker and Siggins pools under the direction of Forest Oil Corporation, experts in this method of production.

Robinson Sand Floods

Twelve examples of typical Robinson sand accidental floods are shown.

The Kraft example is important because although it started as an accidental flood it was continued as a purposeful flood by using first one and later two wells as inputs for brine. It was the first purposeful flood in Illinois and was successful in increasing oil production on a commercial scale.

Water enters Robinson producing sands from upper or lower water sands.

As there are no analyses of sand cores from the neighborhood of any of these accidental floods, and as the amount of

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water entering the sand is not known, there is no way of determining the exact permeability of the sand. An approximation may be made in the Crawford County area based on the sand's permeability to air in many repressured areas in the vicinity of the accidental floods.

The 40 acres which is the SW NE 1-7n-14w, Licking Township, Crawford County, was leased in two parts by different lessees. One of the leases was on two acres in the northeast corner and the other was on the remaining 38 acres. Well No. 2 on the 2-acre lease was drilled very near the line so that offset wells were drilled nearby to the south and west. Kraft 3 was abandoned due to faulty casing, the abandonment being carelessly done so that the water from the shallow gravel bed in the glacial drift which covers the area was admitted to the producing sand and soon traveled through it, flooding out Rhine 9 and later Rhine 8, without increasing oil production from either well.

That the water came from the glacial gravel was proved by the fact that a new well encountered a vacuum in the gravel. This can be explained only by the loss of water from the gravel to the oil-producing sand, thus reducing the pressure on the gravel below atmospheric.

In 1922 the oil production of the Kraft lease showed its first increase which was found to be from Kraft 8 pumping well. After a short decline a considerable increase in production was obtained beginning in 1924, mounting until the end of 1926, and holding above the original unflooded production until after 1930.

The wells were reached by water from Kraft 3 in the following order: Rhine 9, Rhine 8, Kraft 2, two acres, Kraft 8, and Kraft 1, two acres, Kraft 1, and last, Kraft 10 and Kraft 5. The spread of water is shown by contours on figure 73. After water reached Rhine 8 Mr. Paul Torrey was consulted and on his recommendation this well was used as a water input well, using all the salt water pumped from the Kraft and Rhine producing wells. Later Kraft 8 was added as a water-input well, using 100 barrels of salt water per day. Water from the gravel bed continued to reach the oil sand from the abandoned well during the entire time.

The flood was commercially successful. Over a period of nine years after the flood began the Kraft farm produced 38,500 barrels of flood oil. About seven acres was flooded, producing approximately 5500 barrels to the acre, without increasing operating expenses.

This is the first instance of intentional surface flooding in Illinois. The operators were Remlik Oil Company, members of which, in association with the Dinsmoors, introduced gas repressuring in Illinois on the Mumford farm. On this farm was also tried conjoint use of air and water to increase oil production.

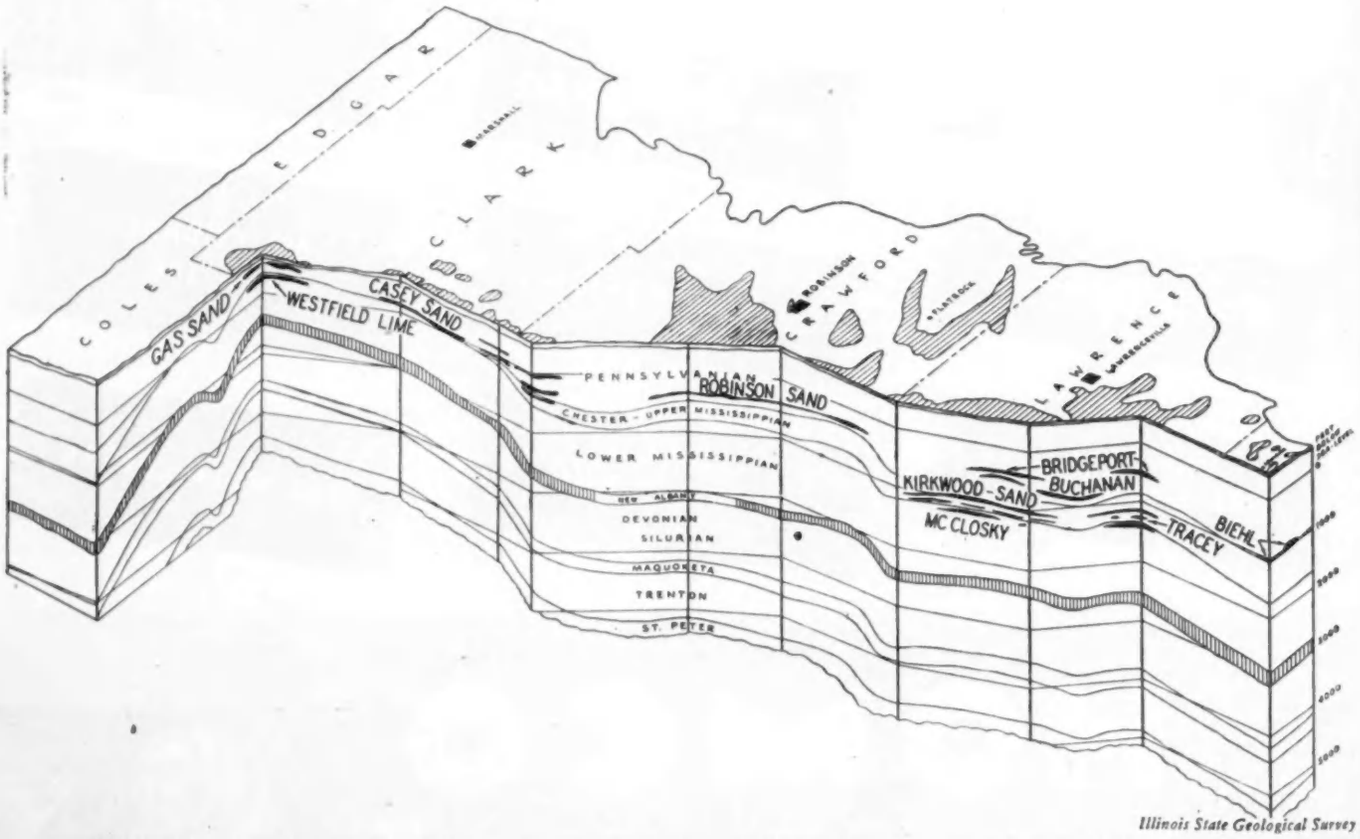
On June 8, 1933, flooding of Illinois oil sands was legalized by an act of the legislature. Within three months, water was introduced into Drake 4, 12-7n-14w, Oblong Township, Crawford County, on a lease owned by Tidewater Oil Company.

This area was selected because it was near successful accidental floods on the Livingston and J. McKnight farms and because water was available from a shallow fresh water well in the glacial drift. Water is pumped into Drake 4 at the rate of 85 barrels a day under 45 pounds pressure plus a static head of 1000 feet.

In the field it was found that Stifle 5, previously a "head" well, began pumping "straight time" and that Drake 6 was pumping longer than usual. Each was making flood water and oil. No other well showed any effect of flood.

With only two wells affected, flood production has already exceeded the normal production of the entire lease for the same time, and the present daily average flood production is about four times the daily average normal production. Operating expenses have not been increased.

If the same amount of water is introduced daily through one well into an oil sand, the pressure will increase (due to greater resistance as the water advances farther into the sand from the



Illinois State Geological Survey

Block diagram of southeastern Illinois showing the sequence and depth of oil-producing strata as a guide to the relative expense of development for flooding.

ENGINES

Field Proven for Oil Field Profits!

THERE'S a lot of much-needed oil being brought up these days by single well pumpers using Superior Vertical Two-Cycle Gas Engines! Month after month these husky motors prove their exceptional dependability and economy. They are ruggedly constructed for heavy duty, with crossheads, roller main bearings, splash and force feed lubrication, water pump, radiator, and roller bearing clutch.

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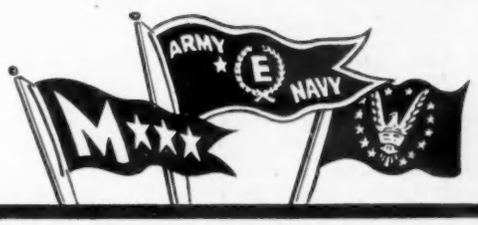
TYPE	DVA	EA	FB
Bore and Stroke	4 x 5	5 x 6	6 x 7
Piston Displacement per Stroke	125.7	235.6	395.8
Rated BHP	10	20	30
Rated RPM	400-800	350-700	400-650
Approximate Length	40¾"	47¼"	65½"
Approximate Width	26⅛"	30"	35½"
Approximate Height	49⅝"	53"	68"

Above horsepower for continuous service. Ample power in reserve for sudden emergency or overload.



The National Supply Company

Executive Offices: Pittsburgh, Pa.

General Sales Offices: Toledo, Ohio. Division Offices: Denver; Ft. Worth; Pittsburgh; Tulsa; Torrance. Export: The National Supply Corporation, 30 Rockefeller Plaza, New York, N. Y., U. S. A.; River Plate House, 12 South Place, London, E. C. 2.

input well) until relief is obtained by removing some of the water through pumping wells. If the pressure does not increase or if it declines, as it did in this case, it can be explained only by leakage. If the packer leaks, the water will normally overflow the input well, and the water will show at the surface. But here, part of the water, leaking past the packer, moved up the hole and entered an upper sand, far more permeable than the lower, which drained off all the excess water under less head above it than the distance to the surface. Its travel through the upper sand was discovered at a nearby shallow well. More than 50,000 barrels of water was pumped into the input well at an average pressure on the sand of more than 400 pounds and a volume of about 80 barrels a day.

The Drake-Stifle flood demonstrates that the process pays. It is the cheapest possible flood because it requires no new wells. On the other hand, it is slow and will take altogether too long to influence the next row of wells. It has been proved by the Drake-Stifle flood that 400 feet from water well to oil well in sands of equivalent permeabilities is not excessive. It is suggested that, for some Illinois conditions, flooding alternate wells in each direction in the customary drilled pattern will be adequate. This would result in a series of contiguous five-spots, each pumping well surrounded by four input wells and would multiply, by the number of input wells, the speed of the Drake-Stifle circle method. It would require no new drilling, which is the principal expense in most water-flooding operations.

The Dennison Township pool was opened in 1909 by McClosky 1 on the farm from which the producing sand takes its name. By 1914 the pool was outlined and drilled up with more than 250 wells covering about four sections. The McClosky is an oolitic porous part of the Ste. Genevieve limestone (Lower Mississippian).

The wells were large and were produced flowing wide open with all gas blown into the air. The result was a sudden lowering of reservoir pressure on the oil-producing area. Water, under original high reservoir pressure, connected through a permeable stratum with this area of sharply lowered pressure, flowed in, moving oil before it. Production had reached its earliest peak due to expulsion of oil by gas and had declined with exhaustion of gas, but it reached a secondary peak when water reached the wells, only to decline with increasing quantities of water. When the economic limit of handling water was reached, the wells were abandoned. Part of the field had reached this stage and all the remainder had felt the effects of flooding when this study was made.

A. B. Coffman farm in Pike County, Indiana, near Petersburg made a striking increase in production following the abandonment of the Rufus Morgan well. The sand is correlated with the Illinois Buchanan. The increase was due to water flooding.

In Pike County, Indiana, half a mile south of the town of Bowman, Stewart 2 started to increase production in 1923 due to water and in 1933 made the largest production of any year since the lease was drilled.

Stewart 2 does not produce any water but its offset well, Fowler 3, pumps 144 barrels a day.

The sand is the Oakland City, equivalent to the Illinois Kirkwood, and is reached at 1266-1271 feet.

These Indiana leases show the highest fluid level yet encountered. The water is most abundant on the northwest, Gray 1 and 2, Thomas 13, and Chew 5, pumping 24 hours with a 40-inch stroke, 17 per minute. When shut down for some time, the first three flow from the tubing, from a depth of 1100 feet. Pumping times range from 24 hours on the north to 5 hours for the most southern wells.

The sand is the Oakland City. The Indiana sands are especially productive under flooding conditions and there is high water pressure in nearly every pool studied.

Biehl Sand Floods at Allendale

Significant in the old Illinois field were the accidental floods on the Biehl sand at Allendale. The discovery well was completed in 1912, and by 1926, some 200 wells had been drilled, followed since by as many more. Of the total, 300 are still pumping. These wells have an average age of 14 years and an average production of 2500 barrels to the acre. The average initial production of 70 barrels a day has declined to 2 barrels. The average thickness of the sand is 29 feet. The wells make very little water. The sand is almost gasless and is gas-pumped to increase the fuel supply which even then is inadequate so that in most cases oil engines are required for power. Repressuring has been tried on two properties with good results.

At Allendale when water breaks through the pipe which cases off the water sand, as often happens, it rises in the well to an average height of

Results on Oil Production—Accidental Floods in Illinois

Name of Lease, Location and Group	Time of Flood	No. of Years Production Used	Bbls. of Flood Increase	No. of Wells Flooded	Flood Production per Well	Average Flood Production per Year per Well	No. of Acres Flooded	Flood Production per Acre
Crawford County, Robinson Sand:								
Kraft, 1-7n-14w, Kibbe	1923–31	9	38,500	4	9,625	1,069	7	5,500
McKnight, 12-7n-14w, Kibbe	1911–	20	22,843	1	22,843	1,142	2.5	9,137
Hawkins, 31-7n-13w, 6-6n-13w, Oblong	1917–18	1	5,250	1	5,250	5,250	2.5	2,100
Wurtsberger, 28-7n-13w, Oblong	1926–	6	4,516	1	4,516	752	2.5	1,806
Frazier, 30-7n-13w, Oblong	1929–	3	5,114	2	2,557	852	5	1,023
Rhodes, 30-7n-13w, Oblong	1922–	10	18,272	1	18,272	1,827	2.5	7,308
Hook and Wylde, 30-7n-13w, Oblong	1928–	4	2,854	1	2,854	713	2.5	1,141
E. V. David, 31-7n-13w, Oblong	1925–	4	5,950	2	2,975	743	5	1,190
D. P. Kirtland, 5-7n-13w, Oblong	1925–	7	5,898	1	5,898	842	2.5	2,359
Harbison, 3, 4, 10-6n-13w, Oblong	1927–	5	7,380	1	7,380	1,476	2.5	2,952
D. A. Mefford, 28-7n-12w, Robinson	1918–	16	18,218	1	18,219	1,138	2.5	7,287
C. C. Baker, 21-6n-12w, Hebron	1920–	16	16,000	2	8,000	500	10	1,600
Lowrance and Funk, 21-6n-12w, Hebron	1915–29	14	12,656	1	12,656	904	2.5	5,062
Oliver Lowrents, 7-5n-12w, Hardinsville	1924–30	8	25,307	2	12,653	1,606	12	2,109
Mary Hoke, 7-5n-12w, Hardinsville	1924–30	8	13,700	3	4,566	570	7.5	1,826
P. Fowler, 26–6n–13w, Hardinsville	1921–26	5	3,160	1	3,160	632	2.5	1,264
Ma Sparks Acct. 2, 36-6n-13w, 1-5n-13w, Hardinsville	1932–	4	10,779	1	10,779	2,695	4	2,695
Asbury Pope, 36-6n-13w, 1-5n-13w, Hardinsville	1912–24	12	35,957	1	35,957	2,996	5	7,191
W. Montgomery, No. 2, 20-5n-11w, Montgomery	1925–	7	6,451	1	6,451	921	2.5	2,580
Lawrence County, Tracey Sand:								
H. C. Johnson, 25-5n-13w, Tracey	1933–	4	1,250	1	1,250	312	2.5	500
Lawrence County, Kirkwood Sand:								
Oscar Smith, 20-4n-12w, Kirkwood	1925–30	7	36,689	1	36,689	5,241	5	7,338
T. C. Combs, 20-4n-12w, Kirkwood	1926–	11	60,606	2	30,303	2,754	5	12,121
Wabash County, Biehl Sand:								
Alice Biehl, 15-1n-12w, Allendale	1935–36	2	7,630	1	7,630	3,810	2.5	3,052
Jake Smith, 22–1n–12w, Allendale	1935–36	2	17,577	3	5,859	2,930	7.5	2,343
Stillwell, 7-1n-11w, 12-1n-12w, Allendale	1935–36	1	3,900	1	3,900	3,900	2.5	1,560
Joe Keyser, 13-1n-12w, Allendale	1935–36	2.25	12,594	2	6,297	2,800	5	2,519
Della Wright, 8-1n-12w, Allendale	1935–36	1.75	13,257	1	13,257	7,600	2.5	5,303
			412,308	40			115.5	

MOVEMENT"

would give anything to Stop!

BENEATH our prairies, over mountains, through swamps, under rivers, stretches a vast network of oil, gasoline and gas pipe lines.

Through it move millions of barrels of oil and gasoline, millions of cubic feet of natural gas—an "*UNDERGROUND MOVEMENT*" so vital to our successful war effort that the Axis would give literally *anything* to stop it.

A substantial percentage of these lines running from wells to refineries, to shipping terminals and points of consumption—more than 30,000 miles, to be exact—is Republic *Electric Weld* Line Pipe.

And much of this pipe has been in service for many years. In some lines it is carrying pressures far above those for which it was originally installed. In *ALL* lines it is providing as close to 100% successful performance as human ingenuity and control are capable of producing.

15 YEARS OF INDISPUTABLE PROOF—IN SERVICE!

Republic *Electric Weld* Line Pipe is not a new product. Long ago it proved *conclusively* its ability to transport gas, petroleum products and water *safely, speedily, economically.*

The first shipment left the mill on April 21, 1929—and immediately this line pipe began to establish remarkable records. By September 1, 1931—in less than 2½ years—5,000 miles had been installed. Today, more than 30,000 miles are in successful operation.

Companion products—made by the same process pioneered and developed by Republic Steel—began to set records, too. Today, some 50,000,000 feet of Republic *Electric Weld* Casing and Tubing have demonstrated their satisfaction-giving service. So have more than 120,000,000 feet of Electrunite Boiler and Heat Exchanger Tubes produced by Republic's Steel and Tubes Division.

Would you like to know the story of these time-proved oil country products? Would you like to see in picture form the Republic process for manufacturing them? Would you like to know about Republic's rigid control of physical, chemical, and welding properties—and how a test is made EVERY HOUR to assure a 100% efficient weld as strong as the wall?

Then write for a copy of "The Pipe of Progress"—prepared particularly for executives, engineers and pipe line construction men.

REPUBLIC STEEL CORPORATION

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"LINE-TESTED" ELECTRIC WELD LINE PIPE

1200 feet and floods the Biehl sand under a pressure of nearly 600 pounds.

The direction of the water movement from well to well demonstrates that permeability, not structure, is the controlling factor. The Biehl sand varies in thickness, but the flood often takes the direction of thinning rather than thickening sand. Many floods go faster up structure than down. The average rate of travel is one well location in three months, about the same as observed in the McClosky sand at the beginning of water invasion.

To date, no flooding well has influenced the oil production of more than a single pumping well, except on the Jake Smith and Alice Biehl leases. There a deliberate flooding program has been adopted and several flooding wells are being used to move oil to each producing well from several directions simultaneously.

The Carlyle oil field, Sections 2-3-10-11-2n-3w, Clinton County, was discovered in 1911, and has produced more than 3 million barrels of oil. It had a productive area of 915 acres, and an average per-acre production of 3400 barrels at the end of 1931.

The field was rapidly drilled up during the early years of its life. The producing horizon, known as the Carlyle sand, is the Cypress formation of the Chester series, and occurs at depths of approximately 1000 feet. It is the equivalent of the Kirkwood sand in Lawrence County and the Oakland City sand in Indiana.

In general, the sand appears to be slightly domed in the central part of the field and to dip in all directions away from the central area.

A number of well logs report water in the oil sand below the oil, particularly near the southeastern edge of the field. The average initial production of 50 barrels per well has declined to one. The average sand thickness is 17 feet. The developed field has 190 wells, of which about half are still pumping. Experimental air repressuring has been tried. The wells were gas-pumped to increase the scanty gas supply, oil engines replacing gas engines for power.

An attempt was made to flood the entire field to increase oil production. A half million barrels of water were pumped in, under pressures up to 500 pounds, plus a static head of 1000 feet. The greatest input was about 1000 barrels a day. The project was abandoned in favor of a return to repressuring with air which has shown no beneficial results to date.

Sandoval is a conspicuous example of successful edgewater encroachment, and it was at first believed that the natural flood supplied all the water required for the greatest possible recovery of oil.

In the later life of this pool, Devonian production was obtained in the same area. Large oil wells were drilled which produced along with the oil such quantities of water as to establish a serious brine-disposal problem. This was solved, in part, by introducing Devonian brine into the Bethel oil-producing sand which was already under a natural water drive. The unexpected result was a tripling of Bethel oil-production.

Experts have, in the past, eliminated fields producing oil under natural water drives from consideration for intentional controlled surface flooding. Sandoval offers evidences that the opposite is apt to be right, in other words, that successful edgewater encroachment is evidence in favor of the possible success of applied floods in the same area.

Applied floods have been developed in the Siggins and Parker pools. Forty acres of Christman Brothers farm in Section 13-10n-10e, Cumberland County, Illinois, and 40 acres in Section 21-11n-14w, Parker Township, Clark County, have been drilled up and prepared for intensive flooding by Forest Oil Corporation, Bradford Pennsylvania. The depth of the producing sands in the field ranges from 465 to 600 feet in one case and from 230 to 350 feet in the other. The pattern chosen is, for both, the five-spot, with five input wells drilled on each line enclosing the Siggins tract, and three in the Parker, and the line of input wells extends in a row across the 40 acres. In the center of each square, the corners of which are formed by input wells, a producing well has been drilled. This makes a pattern of 330 feet from water well to water well and the same distance from producing oil well to producing oil well in the Siggins pool and 660 feet in the Parker pool. The Siggins forty contains 25 input wells and 16 oil-producing wells and the Parker contains 9 water-input and 4 oil wells.

Both input and oil producing wells are completed in the same way. The well is drilled, using 8¼-inch pipe in the upper part and an 8-inch hole through the rest of the sand. The well is cased with 6¼-inch casing where it is necessary to shut off cave below the 8-inch pipe.

The input wells are subjected to sufficient water pressure to cause the oil producing wells to flow.

There is no brine-disposal system since all brine is recycled, being readmitted in turn to the oldest part of the flooded territory.

It is believed that the gravel formation which supplies the water filters it sufficiently that no other filtering will be necessary. The water is kept from the air by a closed system which it is hoped will preclude the necessity of any chemical treatment.

Some of the wells are ready to flow, and the results on production are being awaited with great interest by all producers in the old fields as it is no longer profitable to operate much of this territory.

Summary

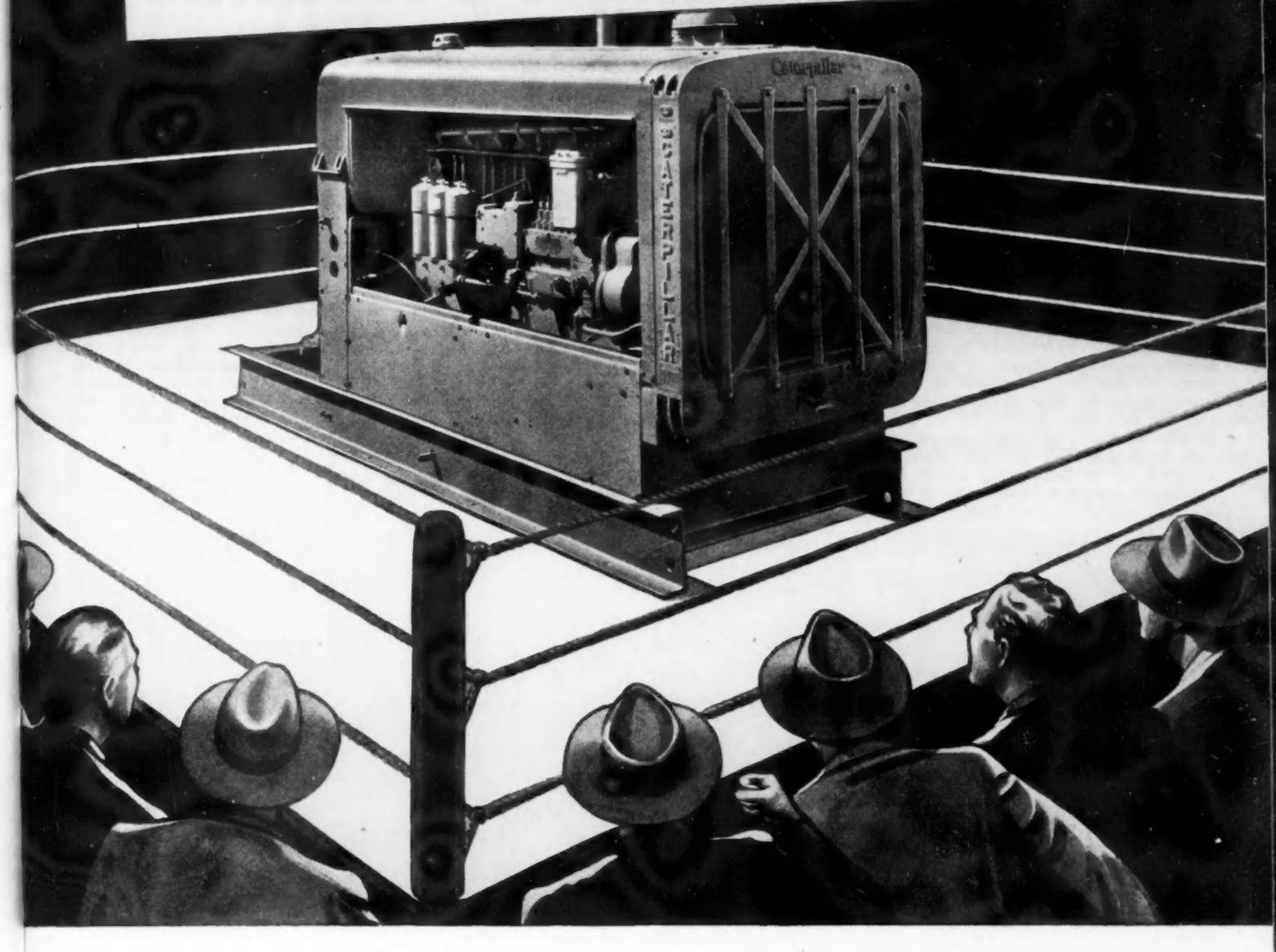
The high lights of the natural floods are these: Water came from a lower formation to cause the Partlow flood. At Flat Rock water brought in so much oil from outside the area that the drilled part of the sand produced more oil than it contained originally. The Buchanan flood is noteworthy for is record-breaking production. The Dennison territory may have been made permeable as a weathered "high" on a cross-fold. Applegate flood water moves unaccountably in the opposite direction from that of the otherwise closely related Dennison flood. Oakland City is unusual in that the flood peaks attained and sometimes surpassed the peak heights of the original flush production. The Murphy flood was abandoned during the period of lag before the flood reached the pumping wells. The Dupo flood water showed the highest fluid levels at the top of the structure.

As far as this paper is concerned, natural floods have no value unless their evidence points to the probable success or failure of applied floods on other Illinois sands. It may be argued that natural floods move under their own power and that the only areas available for purposeful flooding are sands now devoid of all reservoir fluid movement. But, as has been stated, all sand and lime oil-producing strata in Illinois are under some edgewater pressure, and edgewater encroachment differs only in speed. Given enough time, all Illinois producing sands would experience edgewater encroachment. Even Robinson sand wells, when left unpumped for a year, fill up 200 feet or more with fluid. Only edgewater pressure could maintain such heights of fluid column.

Then how do these natural floods indicate a probable success for artificial floods? First, they demonstrate that water moves oil. Second, they demonstrate that many Illinois sands are continuously permeable over large areas. Third, when a natural flood at Sandoval was supplemented by an artifiicial flood introduced within it, this applied flood further increased production. It was proved that each kind of flood produced the same kind of result in increasing oil production.

The efficiency of accidental floods which occur in sands under edgewater drive, is further evidence that applied floods would be successful in edgewater encroachment territory. Because of these facts, it is logical to recommend that purposeful flooding in advance of natural water-drive be applied in pools that are already under edgewater pressure.

BARE-KNUCKLE CHAMPION



THE "Caterpillar" Diesel Engine is all-time bare-knuckle champion in its class. It packs more power and can take more punishment than any other heavy-duty engine of its size.

No other Diesel built can match the simplicity of this engine — important now, when skilled operators are scarce. It's as nearly fool-proof as an engine can be made. There are only three simple operating adjustments—valves, fan-belt and water pump.

From fan to flywheel, the whole engine is "Caterpillar"-built. The fuel system is typical of sound "Caterpillar" design and construction. It requires no adjustments whatever. It can burn any type of fuel that's handy, from cleaned crude oil out of a pipeline to high-octane gasoline. And its fuel economy is famous the world over.

"Caterpillar" Diesel Engines are built for full-load, full-time work — for more productive hours on the job and longer life. They have positive protection against dust, mud and water.

Ease of servicing is a big factor in their favor. Every part that is subject to wear can be replaced with a minimum of labor and expense.

Because "Caterpillar" Diesel Engines are used to power so many different types of equipment — such as excavators, compressors, crushers, locomotives, gravel plants and rollers — it is possible to standardize on them and thus reduce service and operating costs. And they can be hooked up in multiple installations with no loss in efficiency and definite advantages in work output.

Right now, "Caterpillar" Diesels are contributing millions of rugged horsepower to winning the war. With the coming of victory, our full production will once more be available for peacetime jobs. In the meantime, your "Caterpillar" dealer is fully equipped to keep your present machines in running order. Call on him for counsel and service. And if you are qualified to get a new "Caterpillar" Diesel, he will explain how you can apply for it.

• • •

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CATERPILLAR DIESEL

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TO WIN THE WAR: WORK—FIGHT—BUY U. S. WAR BONDS!

Elevated Fluid Level Indicator Shortens Gauger's Rounds

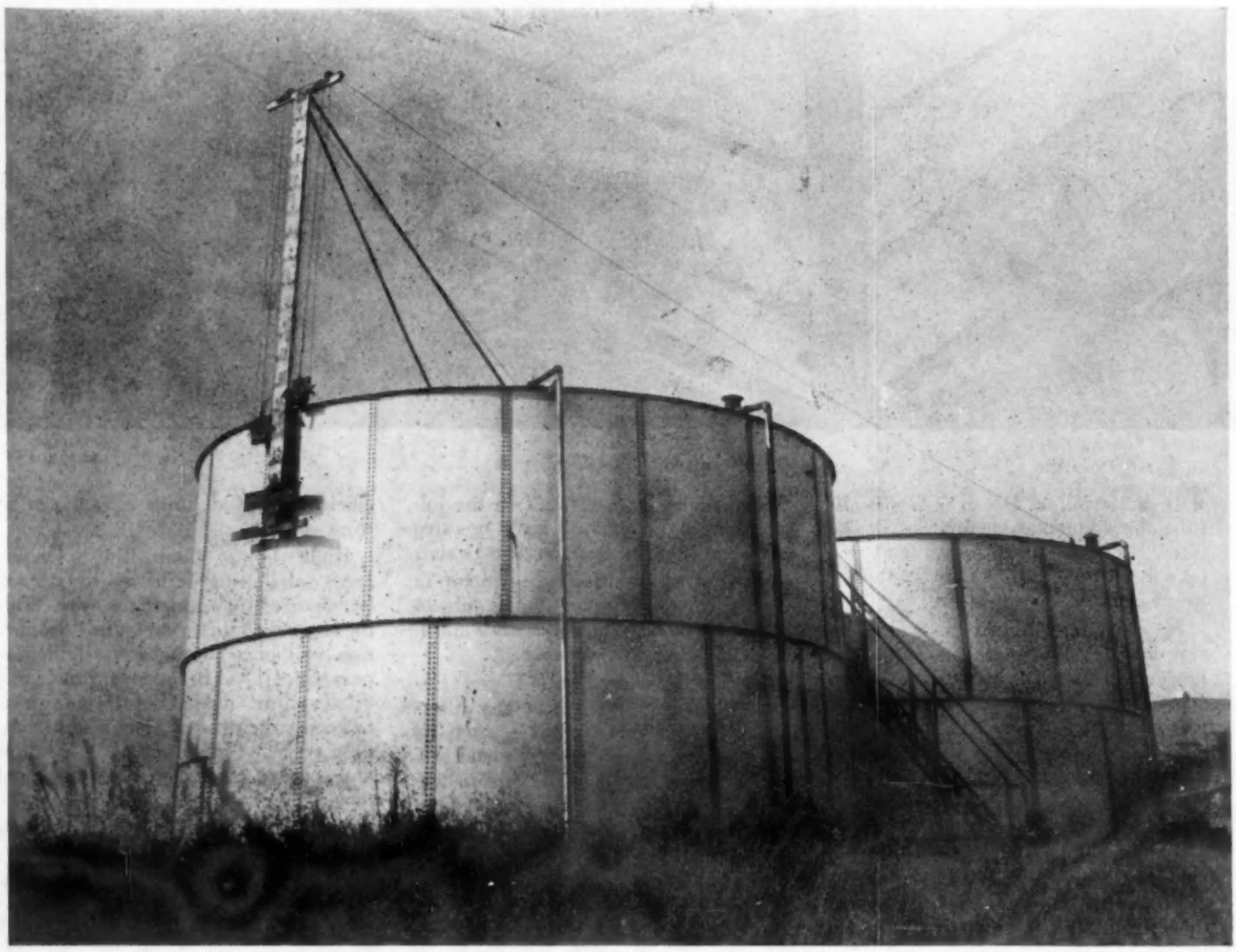
Setting large elevated gauge board atop tank so it will be visible from distance, saves many trips and much time

DURING the present scarcity of manpower in the fields it is more important than ever that help be relieved of all but the most essential activities and spared additional duties that might slow down other operations. To eliminate numerous check trips to a tank battery, one company installed on the top of one of its tanks a large fluid-level indicator which may be seen from a considerable distance. Unusual features of this indicator are its height, being mounted atop one of the tanks, and the fact that two tanks are gauged at one time on the single gauge-board.

A heavy plank, painted white and marked off in feet with black bands and large numbers, was erected on the edge of the front tank. Bolted to the tank near the eave, it also was braced with two lengths of used 2-inch tubing extending back from the top of the gauge board to the tank top. A short cross-arm on the top of the gauge supports two small pulleys over which the two gauge-float wires pass.

The indicators consist of black-painted foot-square blocks of wood with a metal pointer secured to the front side. Keeping each of these markers close and parallel to the board are tightly stretched vertical wires extending between the top and bottom cross-arms. The wires pass through small screw-eyes on the side of the blocks. To prevent the indicator from catching on the eave of the tank during their travel up and down, two semi-circular steel loops or bands were bolted to the tank top edge, permitting the blocks to slide over without catching.

From a considerable distance the lease pumper can determine at a glance just what the fluid levels are in the two tanks. This saves considerable time as he can tell, without driving up and actually gauging, when the level is approaching the critical point. By raising the gauge board some 13 feet above the level of the tank, as well as other buildings, tanks and equipment, this system overcomes the usual fault of similar, but lower fluid-level indicators where the pumpers have to go practically up to the tank to read the indicators.



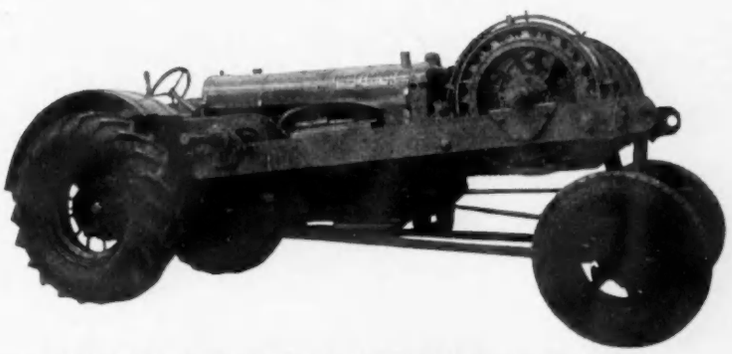
Use of two gauge markers, one on each side, permits single board to indicate fluid level in two tanks.

Built for full-load, full-time work—

"We Keep Them Pulling"

Every Cooper Service Engineer is proud of the job he is doing. Proud of the fact that through his efforts thousands of oil wells are being maintained and produced.

These men handle an end wrench or a complicated well maintenance program with equal ease. Before they can "take the field" as a service engineer they must know Allis-Chalmers Well Servicing Units and Power Engines. Every one of them goes through an intensive training course at the factory—they know how to service and maintain equipment. And what is more, they are anxious to impart their knowledge to your personnel charged with equipment maintenance. *These men are ready to serve you as are the service and parts departments of Cooper, Allis-Chalmers.*



ALLIS-CHALMERS MODEL E SINGLE DRUM WINCH TRACTOR
Maximum Line Pull 58,970 ft. lbs.

FRED E Cooper

Hale Station, TULSA, OKLAHOMA
PHONE 7191 BOX 1890

Internal-Combustion Engine Cooling Improved Through Wind Tunnel

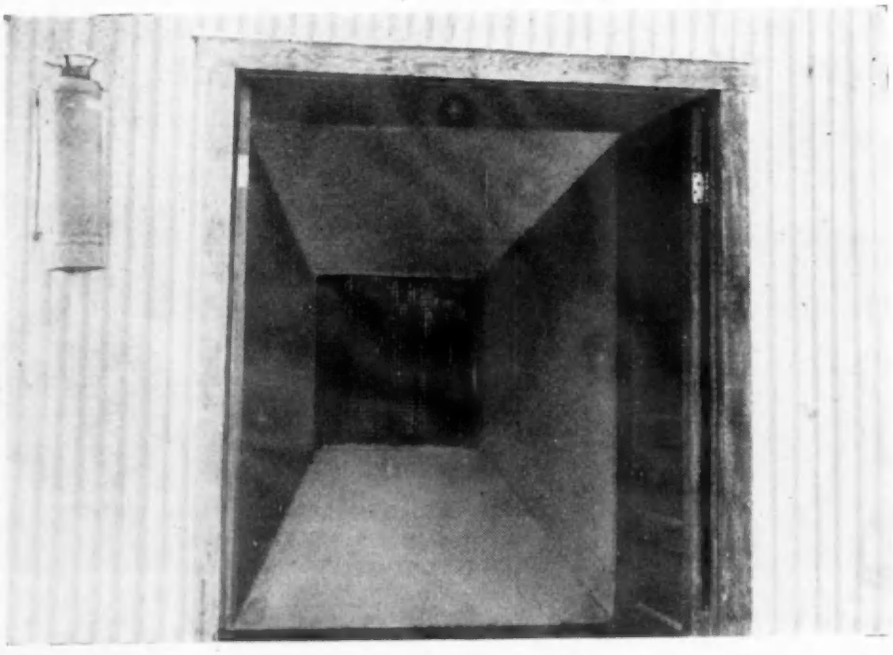
Exclusion of station air from radiator of unitized power plant permits closer regulation of water temperature by preventing recirculation of heated flow through core. Station doors control entrance of incoming air without restricting entry

THE use of unitized power plants for driving pipe-line and gathering systems frequently places the location of the radiator of the engine within the building, instead of permitting it to be exposed to unrestricted circulation of outside atmosphere. With such a set-up, the air through the radiator tends to form a close circle or cycle, being drawn through by the fan, dividing at the engine, and recurving to mix with other station air again for repeated passages through the unit. With each pass, the air temperature rises, until it eventually reaches a point not far below the temperature of the cooling water, or at least too high to permit rapid heat transfer during the short time it is in contact with the tubes and fins.

Gas or gasoline engines in oil-field installations under such conditions with ensuing high jacket and cooling-water temperature can be effectively cooled with a wind tunnel guiding outside air through the radiator. The method employed by one producer and pipe-line operator when using this wind tunnel is to place it in the engine room so that no recirculation of air is possible. Under desert temperature conditions, a pipeline engine is working through the hot-dication of excessive jacket temperatures.

This wind tunnel has the shape and form of a pyramid with the vertex cut off to fit squarely against the shell of the radiator. The connection between the small end of the tunnel and the radiator is made air-tight with felt packing to prevent recirculation of air through the radiator cooling fan. The tunnel has a frame constructed of 2x4's with the small end against the radiator supported by that part of the frame which is extended from the concrete floor to the upper side of the installation. The base of this truncated pyramid extends from the engine room floor to a point horizontal with the door lintel. The horizontal width of the base is equal to the width of the twin, or double doors, placed in the north side of the building. The distance from the base of the wind tunnel to the door opening is that of the door shutter itself. The space between the top of the base and the door lintel is sheathed with plywood, set down from the roof trusses so that the door shutter will open and almost contact it. The top of each door is finished with a felt weather-stripping which makes an air seal against the ply-wood ceiling.

When it is desired to divert outside air through the tunnel to the radiator, one or both doors are opened until the edge fits snugly against the vertical frame of the tunnel base. This fit is not so tight, however, that the doors cannot be opened wide to allow men to pass freely from the field to the engine room, if it is necessary to enter through this opening. Side doors are provided for ordinary passage so that it is seldom necessary to disturb the doors from against the sides of the tunnel. If the nights become chilly, and outside air drawn into the building through the tunnel is too cold for proper engine operation, the shutters are closed and air is recirculated in the building from one side of the radiator to the other. The construction cost of such an installation is low and the weight is not so great that two men cannot handle it with ease, since the sides are made of thin plywood.



Providing free flow of air from entire doorway of station, this wind tunnel insures maximum cooling rate for radiator by preventing recirculation of heated blast after initial pasage through cellular core.

PHONE 7191 BOX 1890

refinery for aviation fuel uses

NATIONAL SEAMLESS Pipe and Tubing

THE major part of the steel pipe and tubing used in the Sun Oil Company's new plant at Marcus Hook is NATIONAL Seamless. There's a good reason for this. Naturally such an important plant should use the materials that will keep it at peak production for the longest possible time.

The record of NATIONAL Seamless for long life under the toughest operating conditions is world wide established. NATIONAL's Complete Tube Service makes it possible for refinery engineers to select the right tubes for each application. This often saves weeks of valuable construction time.

What's more, NATIONAL Tube Company has the diversity of plant facilities to turn out large amounts of all necessary kinds of seamless pipe and tubing.

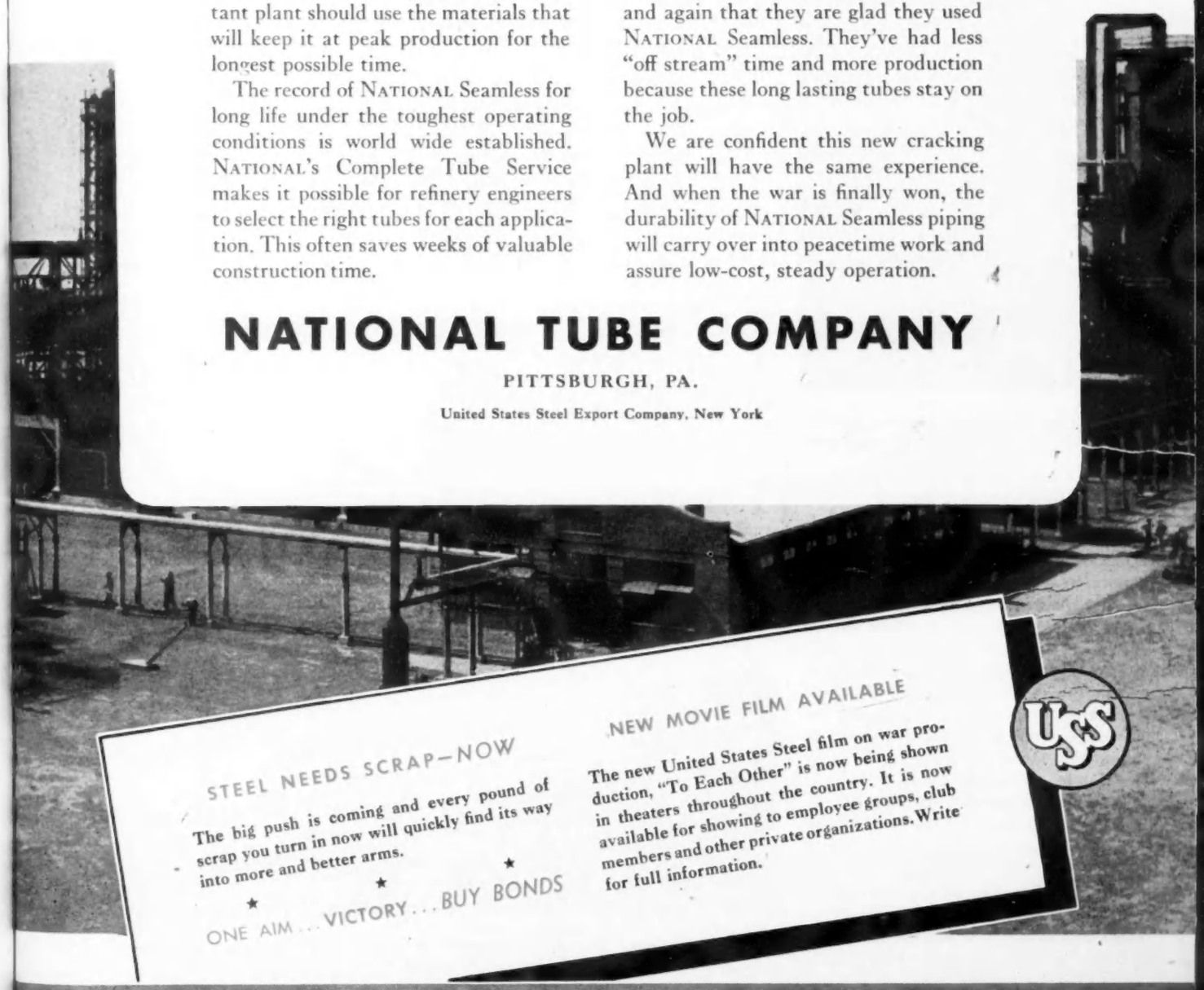
Refinery engineers have told us again and again that they are glad they used NATIONAL Seamless. They've had less "off stream" time and more production because these long lasting tubes stay on the job.

We are confident this new cracking plant will have the same experience. And when the war is finally won, the durability of NATIONAL Seamless piping will carry over into peacetime work and assure low-cost, steady operation.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

United States Steel Export Company, New York



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The big push is coming and every pound of scrap you turn in now will quickly find its way into more and better arms.

★ ★ ★

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UNITED STATES STEEL

PRACTICAL OPERATING *Hints* FOR THE PRODUCTION MAN

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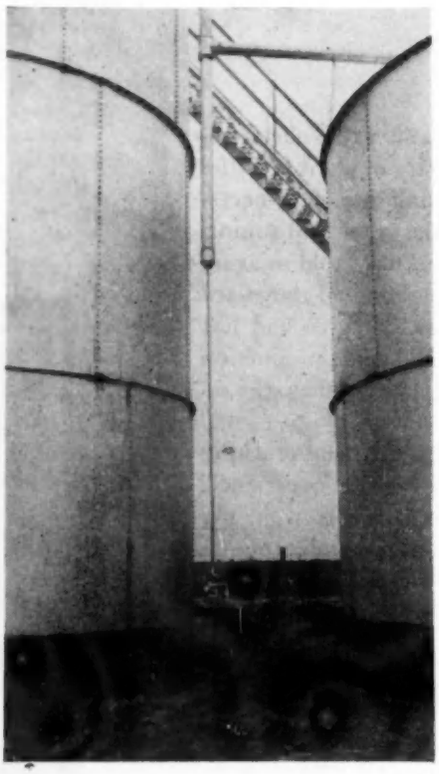
In this and the succeeding number, *The Oil Weekly* will continue to review operating hints which have been carried in this section during the past four years. Selection of the hints to be republished has been made on a basis of their especial application to wartime conditions, their coverage of operating problems which are most apt to confront the man new at his job, and their value to widely separated areas. The 50 hints cannot hope to solve all problems, but are offered that they may serve to speed operations and thus to contribute to increased oil discovery and production.

1. LEASE TANKS

Drip Trap Reduces Water Carry-over



Pocket on gun-barrel vent line with extended drain clears drip before it can reach stock tank.

CONDENSED moisture from the vent line often proves troublesome to operators by carrying over into stock tanks. The vent line usually conveys vapors from the gun barrel by passing directly over the tanks, connected to dome on top of tanks to allow escape of vapors from the stored oil. This moisture, deposited in the tanks, must be removed before transfer of oil to the pipe lines. One operator, however, removes moisture from the line before it enters the tanks by utilizing a small pipe for its drainage.

After removing the ell where the 4-inch vent line from the gun barrel turns toward the storage tanks and replacing it with a 4-inch tee, a 6-foot joint of 4-inch pipe is attached vertically to serve as settling chamber for fluid. A bushing at the lower end of the pipe is connected to a ½-inch pipe which extends to the ground, leveled off and buried in a shallow ditch, extending horizontally under the firewall and ejecting the drained water outside the tank battery area.

The ½-inch drain pipe is equipped with a valve 3 feet off the ground and in a position to permit easy operation by the pumper. Water which would otherwise be carried across the tanks and dropped inside is thus effectively diverted, reducing the production problem in disposing of undesirable fluids mixed with oil produced.

2. SUCKER RODS

Wooden Trough Saves Running-in Cleaning

THE problem of properly caring for sucker rods after they have been laid down is serious on wells which have not been equipped with service derricks, but which are pulled with the aid of masts or gin poles. If the rods are laid out along the ground, a common practice, threads may become fouled with grit, and kinks or bends may enter from laying along an uneven surface.

One West Texas operator solves this problem by constructing a long wooden trough in which the rods can be laid out perfectly flat. Built long enough to handle either a single 30-foot or two 20-foot rods, the trough is set at a slight angle so that oil will drain off the rods before they are run back into the well. The time saved in not having to stop to clean off each set of threads on the rods when they are being run into the hole more than pays for the construction of a trough at each well location not equipped with a service derrick.

3. WATER SUPPLY

Engine Heat Provides Hot Wash Source

UTILIZATION of waste heat carried from the lease power plant through the exhaust pipe is attained by one company through the use of exhaust heat to provide water for bathing facilities.

The horizontal exhaust pipe is extended by slipping an extension loosely over the main pipe, and setting in this enlarged section a return loop of 2-inch pipe. Water for the showers is carried through this loop and, because of the relatively slow flow through the 2-inch as compared with the restricted area at the sprays, the water remains in passage through the loop long enough to be raised to the desired temperature.

By doubling the amount of 2-inch pipe through the use of a coil instead of the simple loop, the water may be brought to a much higher temperature,

Blocking under transverse units of this rod support enables lay-down to be made without kinking, and open sides protect against collision and dirt damage.

Sub-Surface Facts
ON THE CONTROL OF FLOWING WELLS

No. 6 — 1944 — DALLAS, TEXAS

TIS TYPE G (Side Door) HOKE SIMPLIFIES THE OMPLETION & PRODUCTION F TWO ZONE WELLS...

Makes Possible the Taking of Bottom Hole Pressures of Each Zone Independently of the Other

The Otis Type G Side Door Choke has been generally accepted by the oil industry as standard equipment for use in completing and producing two-zone flowing wells.

The Side Door Choke provides a means to positively open and close circulating ports above a packer without moving the tubing string or breaking the packer seal. This makes it possible to set the packer, and the tubing and permanently hook-up the surface connections before bringing in the well, thereby greatly facilitating two-zone completion operations.

The Side Door Choke provides a means to actually record, with a regular bottom hole pressure gauge, the formation pressure of the upper zone independently of the lower zone. This can be done without moving the tubing string or resorting to uncertain calculations.

The complete operation is performed under pressure with the same steel measuring line used to run the bottom hole pressure gauge and requires only three to four hours.

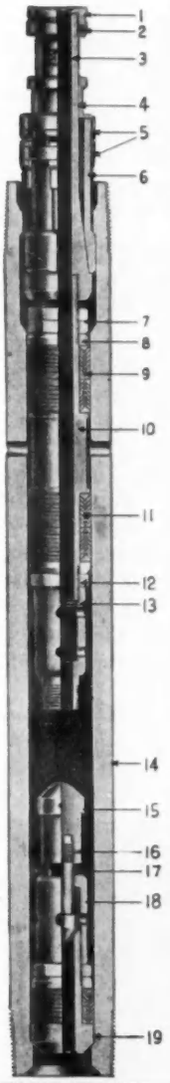
THER USES OF SIDE DOOR CHOKE ASSEMBLY

The Otis Side Door Choke also provides a means to accomplish the following:

- To acidize either zone of a two-zone well independently from the other zone.
- To recondition mud back of the packer without exposing the pay zone to the mud column.
- To take bottom hole samples from either zone of two-zone well.
- To serve as a removable jet collar in a gas-lift operation.

SERVICE—Otis Pressure Control maintains experienced crews and service trucks for the

NEW V-TYPE ASBESTOS BASE PACKING ON OTIS SIDE DOOR CHOKE



1. Retaining Nut
2. Set Screw
3. Mandrel
4. Slip Carrier
5. Bands
6. Locking Dogs
7. Upper Split Packing Nut
8. Packing Ring
9. Upper Chevron Packing
10. Side Bean Packing Mandrel
11. Lower Chevron Packing
12. Lower Packing Nut
13. Bean Cage
14. Landing Nipple
15. Nut
16. Rivet
17. Drop
18. Valve Cage
19. Cup Mandrel

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on
OTIS TYPE G (Side Door) CHOKE
Complete Details on All Its Uses
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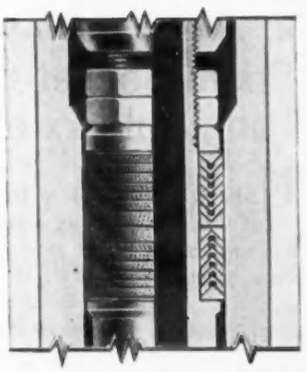
WITHSTANDS BOTTOM HOL TEMPERATURES IN EXCESS OF 400°

New V-Type asbestos base packing, inert t acid and alkalies and capable of withstan ing temperatures in excess of 400 degre and pressures exceeding 5,000 p.s.i., is no



being used on Otis Type G Side Do Chokes.

The change was made advisable aft difficulty was encountered with the form valve cups in certain deep high pressu distillate wells. Under extremely high te perature and high pressure conditions, bo the fabric and the bonding material in t former choke cup were subject to deterio tion.

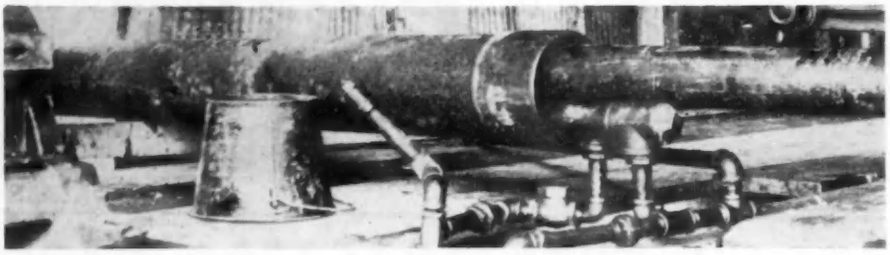
The new V-Type packing complete overcomes this difficulty. Made of ma layers of asbestos cloth bonded by a ceme ing material that resists acids, it is stro enough to withstand any well pressure temperature encountered. The new packi has $\frac{3}{4}$" thickness, whereas the old type w only $\frac{3}{16}$" thick, increasing its strength in t same proportion.

The Type G Side Door Choke with t new packing element assures positive p formance regardless of bottom hole te peratures or pressures.

OTIS PRESSURE CONTROL, INC
DALLAS, TEXAS

Branches: Houston, Wichita Falls, Corpus Christi, Texas; Hobbs, New Mexico; New Iberia, Louisiana; Magnolia, Arkansas

Representatives: Otis Eastern Service, I Wellsville, New York; Western Pres Control, Los Angeles and Bakersfi California



Carrying engine exhaust through larger pipe sleeve, with water-line coil also included in assembly, utilizes waste heat to provide steady hot water supply.

although under normal settings the pipe is not exposed to high enough exhaust temperatures to result in its being burnt, even though left without water.

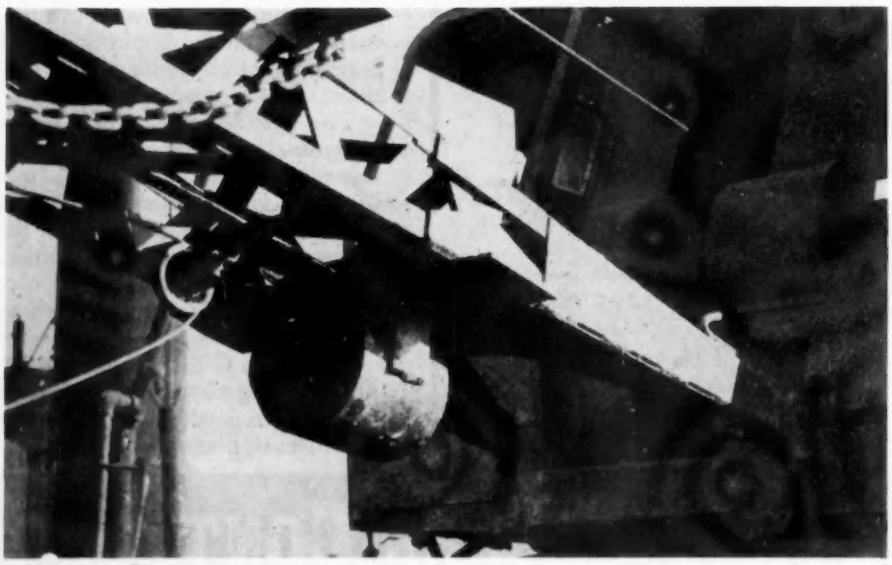
Provision of cleaning facilities, including an ample supply of hot water for bathing, is a safety measure, as men are encouraged to remove oil-soaked clothing before returning home, or exposing themselves to possible fire while driving a car or being in close proximity to someone who might not recognize the menace of oily apparel.

4. *MATERIALS HANDLING*

Boom Socket Carries Long Pole Extension

USEFULNESS of a truck-mounted crane was increased by one company by addition of a bucket mounted near the base of the crane arm. It consisted of a 12-inch section of a 12¾-inch casing with a bottom welded in one end. After being welded to a sturdy base, the bucket was bolted to the arm. The bucket served as a base for a 65-foot wooden pole, the upper end of which extended far beyond the effective reach of the sheave end of the standard crane arm. The pole was firmly lashed to the steel arm at this point.

With this extra arm fastened to the crane, the effective reach was increased considerably, and aided in setting tall poles, tanks and other equipment around the lease that otherwise would have to be set up or moved only with much difficulty.



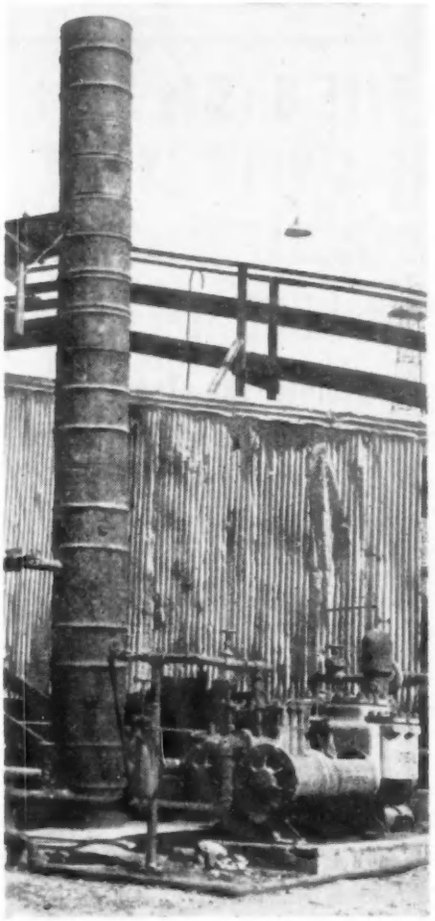
Welded below base of usual boom on this servicing unit, this socket accommodates base of pole extension, which is chained to boom tip to carry light line extension.

5. *EXHAUST CONTROL*

Oil Drum Condenser Cuts Steam Spread

IN ONE of the more congested town-lot drilled sections of a California field, one operator built an efficient exhaust muffler for his steam shipping pumps and other steam-powered equipment. Seven discarded drums were welded together to form a large-diameter stack. The top of each drum was cut out, but only large-diameter holes were cut through the bottoms. When the drums were welded together, these perforated bottoms acted as baffles to the ascending exhaust steam.

Condensate from the cooling steam column quickly drops out and is removed through a drain at the bottom. During normal operations, little excessive noise can be heard, and due to the cooling or condensing action of the column, a comparatively small volume of steam actually escapes from the top of the muffler.



Assembled in series with small vents burned through adjacent heads, this unit muffles pulsations.

6. *LUBRICANTS*

Drum Vent Safeguard Prevents Pilferage

SMALL but continuous losses by theft of small quantities of lubricating oil, solvents and gasoline stored at several field pumpers' doghouses, prompted one company to find a means of locking the drums to make them definitely tamper-proof. The small spigot on each drum was kept locked at all times, but access was usually obtained through the vent openings.

The company welder fastened a 4-inch nipple of 2-inch pipe to each of several plugs similar to those that came with each drum. Two ⅞-inch holes, 90 degrees apart, then were drilled completely through the pipe near the outer end. To one end of each of several 2-foot lengths of ¾-inch sucker rod ma-

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For further information on treatment of rope, write for Booklet "Care and Conservation of Rope"

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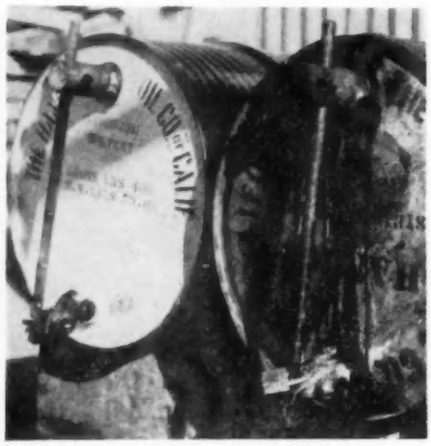


Socket to fit large plug in drum enables it to be locked partly open for venting air to fluid.

terial, several links of medium size chain were welded.

The vent plug of each drum was removed and replaced with the specially prepared one, and the sucker rod bar, after being run through the holes, was then locked to the spigot by means of the chain links.

The installations soon paid for themselves. The arrangement permitted the plugs to remain unscrewed a turn or two for vent purposes, with the drum still locked against theft.

7. SAFETY

Flexible Exhaust Clears Welder Fumes

PORTABLE gasoline-engine powered electric welding machines are among the articles which have had to be conserved and made to do double duty in keeping up with necessary field work. To make as many machines as possible available for work outside in the field, yet have them available for necessary inside fabrication work, one company mechanic rigged up an exhaust system which permits the units to be used inside the repair shop without danger of asphyxiation.

A length of 3-inch tubing was extended through to the outside wall of the building and clamped in place inside near where the unit would be spotted. A length of flexible metal hose was made available so it could be handy at all times to slip over the exhaust pipe and in the fixed pipe extension leading to the outside.

Instead of having to have the shop doors open for ventilation when the units are used inside during inclement weather, the shop may be kept closed. In addition, the exhaust noise now is sufficiently muffled to allow normal conversation in the shop when the unit is running.

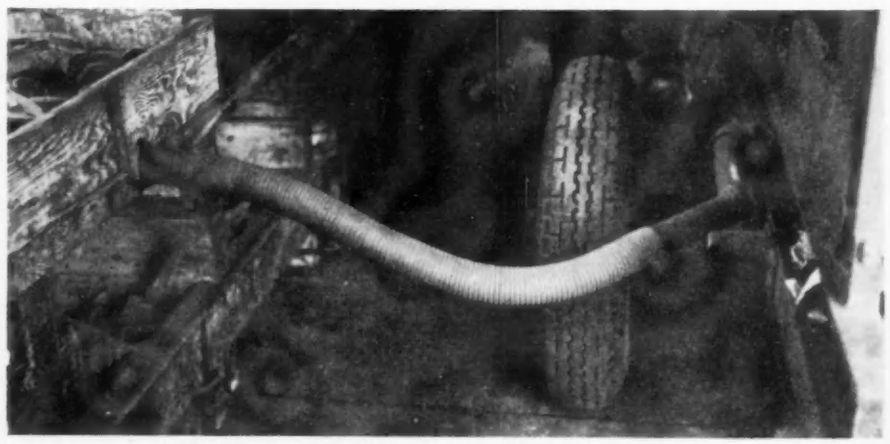
8. PUMPING

Rig Shaft Provides Road-Crossing Unit

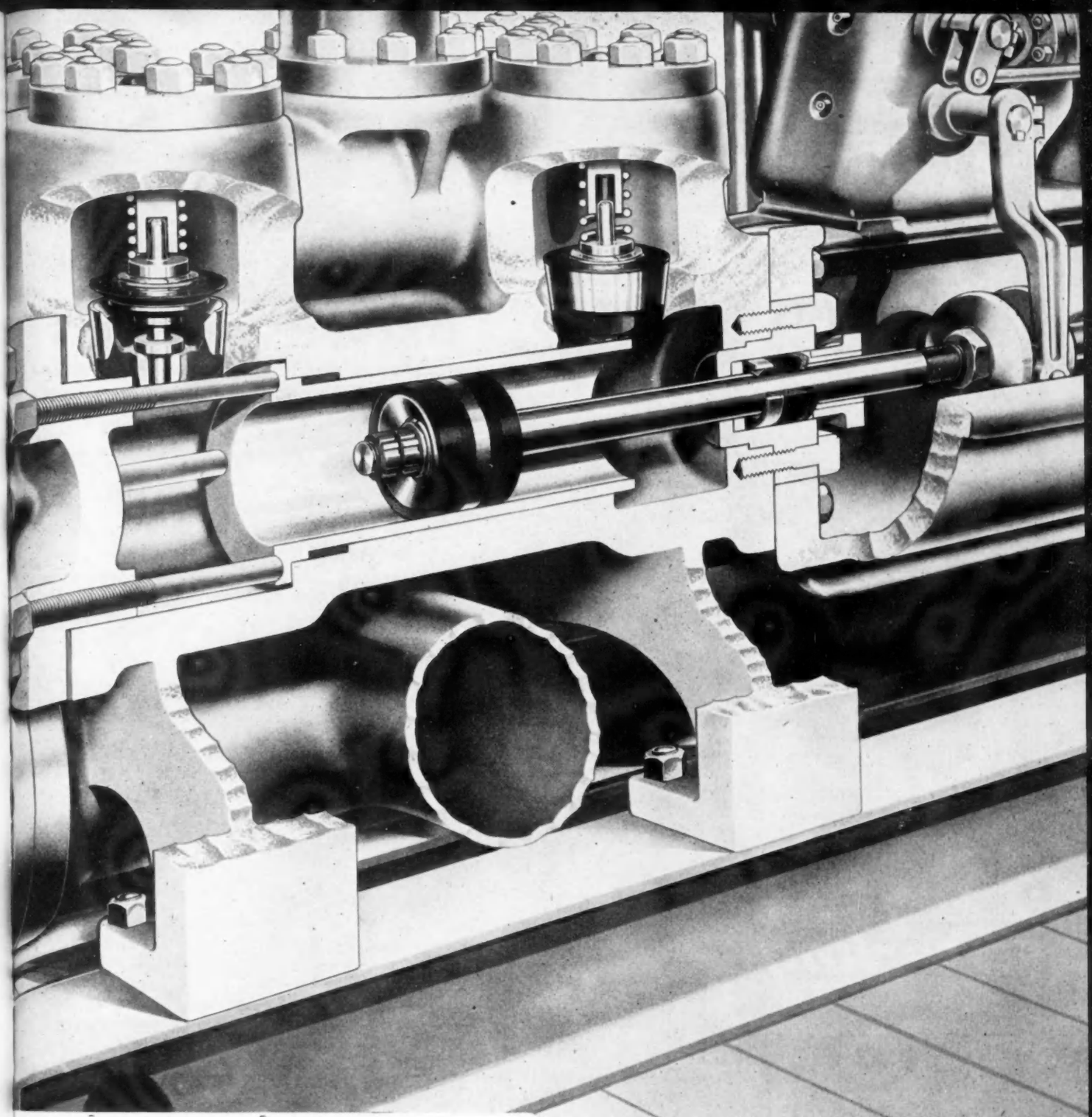
SIMPLIFYING the problem of running jack lines under roadways without installing costly equipment, good use may be made of the salvaged axle and two cranks from an old standard-end rig. A shallow rectangular hole is dug to the desired depth on the well side of the road, and is then lined with concrete. The crank assembly, including the original bearings, is then bolted to the side of the wall in a vertical position with the upper crank projecting slightly above the upper edge of the pit. The cranks are keyed on the shaft in such a position as to bring their cycles coinciding.

A culvert of used casing is laid beneath the road and the jack line from the power plant is brought through it and fastened to a clevis on the lower crank. A similar clevis and jack line leading to the well jack is then fastened to the upper crank.

No lost motion is suffered in this type



Carried through wall of building, this slip-on flexible hose enables internal-combustion powered welder to be used in closed shop without danger from gases.



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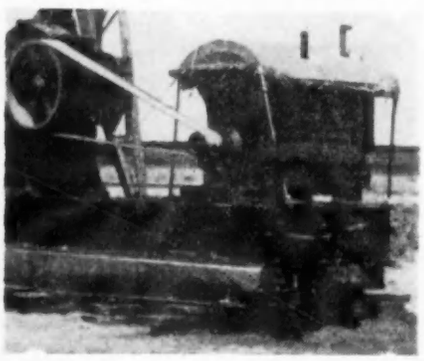
Salvaged axle and cranks from standard rig afford emergency traverse of roadway for rod line when usual underpass equipment was unavailable through war demand.

of cross-over and by securing the clevises in any hole on each of the cranks, any desired length of stroke may be obtained. If necessary, the well's stroke may be reduced or increased by changing crank holes. Lubrication is easily taken care of by building an enclosure over each of the waste-boxes on the bearing caps, and occasionally filling them with a long spout can.

9. PROTECTION

Canvas Cover Unit Extends Engine Life



Rollable sides of heavy canvas permit quick protection of engine against dust and rainstorms.

TO PROTECT pumping unit engines from sand storm, wind and rain damage in certain West Texas areas, one company utilizes a heavy canvas cover which can be rolled down and lashed to the sides of the engine base during shut-down periods.

The cover is supported by a steel rod framework that extends over the top of the engine, and is firmly held in place by lashings run through grommeted holes in the edge of the canvas. Metal flashing protects the canvas around the exhaust and crank case breather stacks. The side and end pieces are made to roll up and be tied out of the way during the times that the engine is running.

10. SERVICING

Tie-Down Eyes Use Flush Sockets

MANY operators are adopting a practice of putting new wells on production with no provision for pulling rods or tubing except by the use of a portable truck-mounted unit. Provision for tying down or anchoring such portable units is being made by one company at a very small cost.

At the time the concrete floor is laid, heavy 1-inch nuts are anchored flush with the floor level at the points tie-downs would be needed. Large 1-inch eye-bolts kept either with each pulling unit or stored at each well then are screwed into the nuts to form a solid anchor for the unit.

The closures or plugs are slotted to simplify placing or removal, a flat bar serving as driver.

Heavy nuts, anchored in concrete beam, are closed between jobs with small flush-type plugs.

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With abundance of petroleum recognized as basis for high standard of living, nations should facilitate United States' successful methods of oil development

Finding World's Oil A Task for American Enterprise

By WALLACE E. PRATT
Vice President, Standard Oil Company (New Jersey)

Reprinted from Standard Oil Company (New Jersey) publication, The Lamp

OVER the last generation the United States has been engaged in becoming a "nation on wheels." Over the same period, petroleum, the source of liquid fuels, our most convenient form of the energy required to turn those wheels, and of lubricants, without which no amount of energy can turn them, has come to occupy a position very close to the top of the list of our most important commodities.

Today, in a world of plastics and synthetics, a world exploded into total war, the hydrocarbon molecules of petroleum take on an even more vital significance. They become the fundamental building blocks out of which our chemical industries construct synthetic gasoline for aviation purposes, the rubber for essential military transport and the even more important TNT (trinitrotoluol) for our bombs and high-explosive shells.

Under these circumstances we can hardly doubt that, barring the conquest of some new, revolutionary form of energy, petroleum must continue to be one of America's paramount necessities.

What, then, of our reserves of petroleum for the future? We realize that the petroleum resources of the earth are a wasting asset. We know that so far as the needs of mankind are concerned, there is no renewal of supply. How large, then, are the stores of petroleum available to us? Where are they situated? What about petroleum for the other peoples of the world? How soon shall we be obliged to substitute other raw materials for petroleum as a source of liquid fuels?

The recently prevailing climate of American opinion has led us to portray the future of petroleum in the United States in dramatic form. The following terse pronouncement is typical:

"Over the last three years our discoveries of new petroleum reserves have consistently failed to balance our annual consumption. Our proved reserves now bulk some 20 billion barrels, a quantity equal to our national requirements for 15 years in peace, or 13 more years of war."

Graphic, but over-simplified, this statement lends itself to misleading inference and tends to confuse rather than to inform the average reader. It contains no hint, for example, that the real causes for the decline in our rate of discovery of new fields throughout the period of the war and the preceding emergency are government restrictions, sub-normal prices for crude oil and shortages of manpower and critical materials. Not only is there no incentive to find more petroleum; there are positive restraints on the wildcatter's efforts to discover oil.

Given a price incentive and relief from wartime restrictions, the industry would surely have drilled twice as many wildcat wells as it did drill over the past two years. And this additional exploration would surely have boosted our discovery rate sharply. All that our domestic finding effort needs for complete revival is the stimulus of crude-oil-price increases plus adequate manpower and critical materials. When these adjustments have been made, there is every reason to believe that our discovery rate will rise again and that our proved reserves will take on a healthier complexion.

Again, the announcement quoted presents our proved reserves in a light which makes them appear to the casual reader or radio listener to constitute our total domestic petroleum resources. Yet experience amply justifies the hope that future petroleum discoveries in the United States will exceed our total past discoveries. Those past discoveries aggregate some 45 billion barrels, a figure which includes our proved reserves.

This statement also ignores our proved reserves of natural gas which, measured in terms of available energy, are equivalent to an additional reserve of about 17 billion barrels of liquid petroleum. In this connection it should be recognized that natural gas is petroleum in gaseous form and the point should be emphasized that with modern equipment and technique, natural gas can be converted into liquid fuels at unit costs only slightly higher than are involved in the conversion of liquid petroleum. Reserves of natural gas, therefore, are practically equivalent to an equal weight of liquid petroleum.

Finally, the estimate of 20 billion barrels of proved petroleum reserves excludes any consideration of reserves discovered by Americans in other countries during the last 30 years. The proved reserves remaining in these properties constitute another 20 billion barrels, or so, of liquid petroleum, plus the usual additional reserves of gaseous petroleum which are associated with it.

The total proved reserves of petroleum remaining to be recovered from natural resources already discovered and developed by Americans at home and abroad, therefore, are of the order of 60 billion barrels, a reserve more nearly commensurate with the needs of the nation than the commonly estimated 20 billion barrels.

One fact which may be deduced from the statement we have had under consideration deserves emphasis. Our ordinary peacetime consumption of petroleum in the United States amounts to 450 gallons annually per capita. Compare this index of consumption with that for the average citizen of the rest of the world, which stands at 15 gallons; or with 80 gallons for the United Kingdom; or with 50 gallons for Russia. The average American consumes 30 times

Petroleum does the work of 144 servants for the average American family. If it were made abundantly available to every nation, living standards could be raised, and a great stride taken toward permanent world peace.

The United States enjoys an abundant oil supply because of diligent search by private enterprise, a record that demonstrates competence of American business to undertake the task of developing the petroleum resources of the world. Governments can contribute most by facilitating the world-wide operation of free enterprise.

When given a price incentive, plus relief from wartime restrictions, domestic discovery rates will rise again and United States reserves also will assume healthier outlook.

as much petroleum as the average citizen elsewhere in the world.

The significance of our abundant use of petroleum becomes evident when we convert our consumption into its equivalent in mechanical work. The culture of ancient Greece, we are told, was founded upon slave labor. The leisure of the elect rested upon the unceasing labor of the multitude. In no age have high standards of living been attained except through large production of goods per capita. Large production means either the labor of many men or the skillfully directed mechanical work of power-driven machines and labor-saving devices. In this dependence of high living standards on bountiful production of goods, we have a yardstick with which to measure the value of the petroleum consumed. The available energy from our output of petroleum is equivalent to the work of 4.5 billion men, laboring 8 hours a day, 6 days a week, year in and year out. In effect our petroleum provides us with an average of 36 strong, able-bodied slaves for every man, woman and child in the United States; for the average American family, petroleum does the work of a staff of 144 servants!

We believe that Hitler's gigantic efforts at conquest were designed to reduce to slavery all the population of Europe. On the slave labor of these people, Hitler planned to erect a preferred status for his "master race." But if Hitler had conquered the whole world and enslaved all humanity, the human manpower under his lash would have amounted to less than one tenth of the mechanical manpower that has been at our disposal for years in the form of petroleum molecules. So effective a basis for a high standard of living is an abundance of petroleum!

This fortunate condition, this supply of petroleum so far in excess of that any other nation has enjoyed, is due, we are commonly asked to believe, to the fact that our country has been blessed with unusually rich natural resources of petroleum. I am convinced that this is a mistaken belief. If we accept it, we must deny recognition to another even more precious heritage, with which as a nation we have been so richly blessed.

Because we have found much petroleum in the United States, it is assumed that we must have been blessed with unusually rich petroleum-bearing rocks to explore. But the facts are that the really rich petroleum resources of the earth, which in comparison make our own resources appear meagre, lie outside our national boundaries. When the petroleum resources of the earth have been fully explored it will probably be established that less than 15 percent of these resources lie within the boundaries of the United States.

What we have been blessed with in the United States is a native genius, combined with political and social concepts which have enabled us to explore for petroleum more effectively and to discover petroleum more rapidly in our own country than any other people on earth.

We have enjoyed an abundance of petroleum resources in America because we have gone out and searched for petroleum diligently and effectively all over our country until we found it. Other nations have made no such search for petroleum; had they done so, many of them also would have it in abundance.

The methods we have employed could not succeed in any other than an atmosphere of democratic free enterprise. Had ours been a highly centralized government, the search for petroleum we have carried out would have been impossible. Had our economic society been rigid with class distinction, our success, at best, would have been slower and less complete.

Why? Because we have brought to the task of petroleum-finding, in addition to the methods of applied science, the spirit of the pioneer. To a native ingenuity which enabled us to design and operate the ponderous mechanical equipment necessary to drill and recover petroleum from wells of unprecedented depth, we have added the characteristic risk-taking instinct of the frontiersman. Driven by this instinct, armed with this machinery, we have gone about over our land, thousands of us, in small, "wildcatting" enterprises, drilling tens of thousands of exploratory wells every year for a generation, in search of petroleum. Our geographical frontiers having already been subdued, we have searched out in the vertical dimension, beneath the surface of our land, a new frontier. The conquest of this new frontier has brought us our abundance of petroleum.

Every nation has this same frontier, but no other nation has explored it as we have. Many nations have failed after repeated attempts, even where the natural obstacles to success were no more difficult than our own. But many nations have had to contend with man-made as well as natural barriers to successful petroleum finding: restrictions by the state of the right to drill exploratory wells; state ownership of minerals; state monopoly of the rights to explore. Any of these conditions gravely handicaps the development of petroleum resources. Even the existence of a landed gentry with unbroken ownership of large areas, in contrast to our widely divided ownership in small tracts, would paralyze the effective operation of the American petroleum-finding enterprise.

Petroleum and coal, our mineral fuels, are the fossil sunlight of two thousand million years of earth history. In coal, which forms only on land, we have preserved for us the energy of the light which bathed the surface of the land. In petroleum, formed in the seas adjacent to the land, is the energy of the light which fell upon the waters.

We believe that the source of petroleum is the organic matter that is buried along with the muds on sea floors. This organic matter, is in turn the entombed life of the sea, life that is more abundant near shore and in shallow waters.

The known coal resources of the earth we estimate in the thousands of billion tons. But the petroleum resources of the earth we are inclined to think of only in tens of billions of tons.

Why this great discrepancy? What has become of all the organic matter that fell to the bottom of our former seas? Has the life which dwelt in the sea been so much less abundant than that of the land?

The present land surface of the earth has an area of about 60 million square miles. Of this total, some 22 million square miles has been covered at times by shallow seas and is composed of rocks that were formed on sea floors.

Of this area, the rocks of first-class promise for petroleum cover 6 million square miles; the remaining 16 million square miles is of lesser promise.

If we consider only the 6 million square miles of first-class promise and apply to the rocks underlying it for the moderate depth of one mile only the figure for the average organic content of the rocks of sea floors, namely 2.5

percent, we are confronted with a quantity of organic matter in those rocks alone ten times greater in weight than all the known coal resources on earth.

If only one-tenth of one percent of this organic matter had been converted to petroleum and concentrated in the pore spaces of the enclosing rocks, the earth's petroleum resources would be many times greater than the total known reserves.

In the light of these facts, it does not seem unreasonable to suspect that a great deal of petroleum remains yet to be found.

The potential petroleum resources of the world should be developed. If abundant, low-cost petroleum were available to every nation, standards of living could be raised materially throughout the world. At many remote places adequate transportation and mechanical energy can be made available to the inhabitants only through cheap liquid fuels, such as are produced from petroleum.

Here is a task—the development of the petroleum resources of the earth—which American private enterprise is well qualified to undertake. Our past record both at home and abroad amply demonstrates our competence. The comfortable situation which the United States occupies with respect to petroleum reserves is the result of private initiative.

The history of the petroleum industry throughout the world demonstrates that finding and recovering petroleum are enterprises which do not lend themselves to successful performance by the state.

Governments have seized petroleum resources developed by private enterprise over the last 30 years and in some cases these governments have succeeded in expanding production from the seized properties. But no government has yet succeeded in developing sufficient petroleum production to meet the needs of its own people, even from seized properties. None of the many state-operated petroleum monopolies makes a significant contribution to the stream of petroleum which flows into world commerce today.

The contribution which governments can well make to the development of the petroleum resources of the earth is to facilitate the operation of free enterprise throughout the world. If the methods of the American petroleum industry, through the diplomatic support of the American government and the friendly cooperation of other governments, could be extended into all countries in an industrial crusade to discover and develop the petroleum resources of the earth, a great stride would have been taken toward permanent peace in the world, and toward an improved standard of living for millions.

Adjustable Chain Tie-down Speeds Pulling Jobs

Method of anchoring pulling unit eliminates lost time in setting up and helps keep down injuries

CONSIDERABLE equipment, time and man-hours lost on a pulling job may be charged to rigging-up and tearing-down operations. Cutting down the time ordinarily required for anchoring the pulling unit will go far toward reducing this expense. This aim prompted one company to devise a quick, positive means of making fast the pulling unit. Using salvaged materials throughout, plus an ingenious shop-made tightening arrangement secured to each side of the pulling unit, a tie-down system was devised which has numerous advantages.

The tie-down consists of a single, heavy chain secured at one end to a threaded stud swung in a small gimbal mounted in a special shelf-like bracket welded to the unit frame. The other end of the chain, after being looped through a ring set in the concrete floor, is brought back up to the unit frame and locked in place by slipping one of the links edgeways into a slot cut into another part of the frame fitting. A retainer key to prevent the link slipping out is made from a ½-inch bolt bent into a U-shape, with the threaded end of one of the legs left an inch longer than the other.

The U-bolt is inverted and slipped through holes drilled on either side of the slot, with a nut screwed on to the longer leg. This allows the retainer to be lifted up just far enough to release the short leg and swing it away, yet it does not allow it to jump out and become lost while moving the unit beteen jobs.

While this slot and retainer permits adjusting the chain to the nearest link, the final tightening adjustment must be made from the other end containing the threaded stud. Tension is set up by tightening the nut down against the gimbal. No matter what the angle of the chain, the free-swinging, shop-made gimbal provides at all times a flat surface normal to the stud and outstretched chain. Short, heavy timbers placed under the framework provide the solid base against which the chain anchor is tightened.

No modification of existing eye-bolts concreted in the floor is necessary as this loop-chain arrangement is adaptable to a wide variety of fittings. As soon as the unit is spotted reasonably close to the pulling unit location, the tie-downs on either side of the unit may be made up in only a few minutes. Breaking-down operations are also quick, the chain being looped up over the unit framework while driving between wells.

Use of large eye for hitch, and chain carried in special fixture on side of unit, permits quick adjustment of chain, with final tightening obtained through threaded take-up at swivelled, threaded block.

Old Timers Know Their Drillin'

SAY, GRANDPA! DO THOSE P-B PROTECTORS REALLY SAVE TOOL JOINTS AND CASING?
YOUNGSTER, I'VE BEEN DRILLIN' THESE OIL WELLS FER YARS N' YARS. WOULDN'T EVEN THINK OF DRILLIN' WITHOUT PATTERSON-BALLAGH PROTECTORS.

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The most recent improvement in the Patterson-Ballagh Protector is the heavy, rugged lip, top and bottom. Gripping power is gained, and, from reports, "ringing" of the drill pipe has been eliminated.

Heed the old timers and investigate Patterson-Ballagh's new lipped protector. Now made of PBX, the new oil proof synthetic.

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Patterson-Ballagh Protectors

☆ ☆ ☆ ☆ WASHINGTON ROUNDUP ☆ ☆ ☆ ☆

WASHINGTON oil developments last week again centered around the foreign situation, with President Ickes of the Petroleum Reserves Corporation definitely on the outs with the Petroleum Industry War Council while Petroleum Administrator Ickes and the council maintained their normal friendly relationship.

Emphasizing that its action was aimed at Ickes as head of PRC and not as oil administrator, the council adopted a report of its national oil policy committee condemning government oil operations and a resolution denouncing the Middle East pipe line project and again calling for dissolution of PRC. (See page 14.)

How deep the rift between PIWC and PRC was evidenced by the decision of the council to carry its fight to the country, through the Washington correspondents of the press associations and daily newspapers.

Two other outside areas entered into the news of the week, one being Mexico where, reportedly, the United States was about to build 500,000-barrel pipe line capacity to carry Texas oil from Houston to the Pacific Coast with a stop over in Mexico for refining. PAW, PRC, Army and Navy quickly and emphatically denied that any such project was in the works, leading to the inference that it might be a State Department baby, to be financed through the Import-Export Bank or a Mexican-inspired rumor. State Department officials were not talking, but an emissary of the Mexican government was in Washington at the time. Similarly PRC denied a Mexico City report that Uncle Sam would finance a 20-year development of the Mexican oil industry.

The third area to come into the picture was Alaska, where the Navy Department and PAW are considering an exploration program. Reportedly, there was a difference of opinion between the two agencies as to the most likely areas in which to look for oil. The matter was the subject of a conference between Ickes and other interested officials on March 2, the results of which were not disclosed.

PIWC Continues to Fight for Liquidation of PRC

»

Departments Deny Reported Plan for Mexican Pipe Lines

»

Many Producers Given Increases Since OPA Froze Prices

»

By B. F. LINZ,
Washington Correspondent

☆ ☆ ☆ ☆

PIWC Told Casing, Tubing and Drill Pipe for Second Quarter Sufficient

■ CONTINUED FROM PAGE 15

United States government itself, they will undoubtedly feel that they have a real grievance.

"6. It is not necessary for the United States government to build this pipe line. If it is justifiable from a commercial standpoint the companies should, and are able to, build it—if not commercial, it should not be built.

"7. The direct participation by the government of the United States in a pipe-line system traversing the territory of three foreign nations can easily lead to international misunderstanding and pave the way for a future war through the involvement of our national honor. Certainly such a project with all of its implications should be submitted for the approval of Congress with ample time for thoughtful consideration.

"8. Any advantages which might accrue to the United States and its people from the construction of such a pipe line by the United States government could all be obtained through the vigorous and sympathetic diplomatic support on the part of our State Department, under established principles of international law of the rights of our nationals operating in foreign fields."

At the pre-council meeting of the production committee it was disclosed that PAW is consulting with the Treasury Department with a view to having the latter grant the deduction of exploratory expenses for income-tax purposes, and a resolution dealing with the views of the committee will be brought up at the April meeting.

Large quantities of additional oil could be made available if prices were increased to encourage the adoption of secondary-recovery methods, it was brought out in the monthly report of PAW Production Director Don R. Knowlton.

Studies which have been made, Knowlton said, indicate that in the Alleghany field approximately 53,000,000 barrels more could be made producible with a 50-cent increase, and approximately 10,000,000 barrels more for each of two further similar increases. In the Bradford field, the first 50-cent increase would make producible 121,000,000 barrels, while a $1 increase would provide 133,000,000 and a $1.50 increase 139,000,000 barrels.

In District 2, a 25-cent increase would give an additional 134,000,000 barrels, while a 50-cent increase would add another 169,000,000 barrels and a 75-cent advance still another 244,000,000 barrels.

Second quarter allotments of materials to PAW by the War Production Board include 465,000 tons of carbon steel, 93,520 tons of alloy steel and proportionate amounts of copper and aluminum, it was reported by PAW Materials Director Frank A. Watts. Of the carbon steel, 280,000 tons will be required for production operations, which also will take 52,000 tons of alloy steel. The greater part of this 332,000-ton supply will go into oil-country tubular goods, 262,000 of it for casing, tubing and drill pipe.

The casing, tubing and drill pipe scheduled for production and delivery during the second quarter, Watts assured the committee, will be sufficient for the conduct of all presently planned drilling operations.

Commencing with third quarter allotments for oil-country tubular goods, PAW will make no further attempts to influence operators to use carbon steel or not to use alloy steel, and this relaxation will continue as long as operators confine their purchases of N-80 casing and tubing and alloy-steel drill pipe for operations actually requiring the use of that material.

"Most petroleum equipment manufacturers are increasing their production of equipment required for oil-well drilling and oil-producing operations," Watts reported. "Supply and demand for the majority of these items are rapidly getting in balance. PAW is now able to allot to any equipment manufacturer all material required for his production of equipment required in petroleum production operations. In addition, PAW is in position to expedite the delivery of components—bearings, casings, forgings, etc.—required in the manufacture of this oil-field equipment."

Tank Car Movements

A total of 318,652,276 barrels of crude and products were shipped into District 1 by tank car from other districts during 1943, it was disclosed in the monthly report of the PIWC's Committee on Petroleum Economics.

Of this, the council was told, 92,647,412 barrels moved from District 2, 33,492,000 barrels of it from Norris City terminal of the Big-Inch pipe line; 215,703,858 barrels from District 3, 48,516 barrels from District 4, and 252,940 barrels from District 5.

Assembling this data for the first time, the committee reported a real need for a quicker turn-around, as recently urged by PAW, the figures showing that tank-car shipments showed an increasing trend from the beginning of the year through August, following which a sharp recession set in which continued through the remainder of the year.

The committee's discussion showed

that outlook for District 1 has improved during the past month, although the situation in the New York area will be critical until the Little-Big-Inch comes into regular operation.

With improvements in transportation apparently assured, the committee voiced an expectation of daily runs to stills during March of about 780,000 barrels, increasing the output of products over February levels by 20,000 barrels daily.

In District 2, the report said, the basic problem still remains one of crude oil supply despite strenuous efforts by PAW and the industry committee of that district.

While the removal of the restrictions on the payment of extra transportation costs on West Texas crude and extension of the compensatory principle to include any crude from any other sources outside of West Texas that may be made available were seen as favorable developments, the committee warned that the general transportation situation will "very definitely" slow up the full development of those plans.

Crude stocks in the district are at, or near, recently established low levels, it was explained; military demand and the current shortage in District 1 necessitates concentration of most of the available transportation facilities to the East Coast movement, and as a result, crude which was to have fed industry pipe lines in District 2 through the Big-Inch is now moving directly to District 1.

District 2 has recently established the highest rate of crude runs to stills for over a year, achieved at expense of crude inventories and during a period when its stocks should be increasing in anticipation of opening of Great Lakes navigation, it was said, and runs to stills cannot be maintained at these levels for more than a few weeks unless additional crude supplies are made available.

"The bulk of idle refining capacity east of the Rockies is located in District 2 and the importance of increased refining operations within that district is emphasized by recent military demands for large quantities of 80-octane all-purpose gasoline and Navy specification diesel fuel." it was stated. "Under today's shortage of crude oil available to the district, production of desired quantities of these materials is resulting in shortages of regular products for civilian use and for shipment to District 1."

The committee believes that crude production in District 4 could be further increased if it were made available to refiners within the district and in other districts, but could see as the only means of accomplishing this the adoption of compensatory payment plans, such as recently adopted for West Texas oil moving to District 2. About 20,000 barrels daily refining capacity is now idle in the district.

Senator Thinks Arabian Line May Never Be Built

Criticizing governmental interference in the oil business, Senator E. H. Moore of Oklahoma predicted during a recent visit in Tulsa that the projected Saudi-Arabia pipe line may never be built.

Besides anticipated congressional opposition which, Senator Moore declared, will develop when the special committee of nine takes up the study and investigation of the Petroleum Reserve Corporation's pipe-line contract, the senator said that he has it on "good authority" that the engineering problems of building the line across approximately 600 miles of the world's worst desert lands, may prove too great a handicap.

"I am strongly opposed to government interference in the oil business; there is no need for it since American free enterprise is capable of handling private business," he said. "The economic success and development of our nation is positive proof of this opinion."

He pointed out that the government should limit its acivities in foreign oil matters to providing all diplomatic assistance to American nationals interested in developing foreign oil properties and to advise other powers that it is prepared to give full protection to American interests wherever they may legitimately operate.

While supporting American interest in foreign oil reserves, Senator Moore discounted reports concerning fast dwindling oil reserves, declaring that "we shall live to learn that all this talk of an oil shortage in the Western Hemisphere is greatly exaggerated.

"Let American oil interests continue to develop American oil deposits and build future reserves," he said. "We have the markets on this side of the oceans; the Near East has not, nor will it have for many years to come. Besides, transporting Near Eastern oil to this country either as crude or as refined products will be costly and difficult."

PAW Recommendation Followed by Texas Cut

The Texas Railroad Commission last week was advised by PAW that the total amount of oil recommended for Texas during March had been reduced from 2,018,000 barrels to 1,965,000 barrels per day. The commission had demanded a cut in the recommendation before it would make any material reduction in field allowables.

In order to effect the reduction, the commission reduced allowables in 15 fields. However, increases were listed for two other fields. All of the changes were made by revising the number of shutdown days, rather than changing individual well or field allowables.

The Panhandle will be allowed to produce 26 days instead of 23 days as provided in the original March order. This raised the average daily allowable 11,640 barrels to 100,880 barrels a day.

PRC Dissolution Is Not Favored by Navy

Liquidation of Petroleum Reserves Corporation is opposed by the Navy Department and before any action is taken on the Brewster-Moore resolution "there are certain confidential aspects to the matter" which the Navy would like to present, Secretary Frank Knox said last week in a letter to Chairman Burton K. Wheeler of the Senate Interstate Commerce Committee.

Knox asserted that PRC was set up to supply "an instrumentality through which all interested agencies of the United States government could determine upon a policy and a line of action for petroleum reserves overseas, and give effect to decisions reached."

The corporation, he said, will be in a position "to assist American corporations and their nationals in their efforts to gain participation in foreign petroleum reserves and in foreign petroleum development" and it was not designed as a producing, refining or marketing organization nor does it "propose to compete with the private oil industry in this country."

"On the contrary," he told Wheeler, "its purpose is to promote the private oil industry in this nation, and to further the interests of the people of the United States.

"A realistic view of the conditions confronting the government demands the existence of some government agency which, working with industry, will be able to study and advise upon steps which must be taken to assure the flow of petroleum supplies to the United States from overseas sources when and as required."

It was noted that Knox did not include transportation in the list of fields which PRC did not intend to invade. So far the only commitment made by PRC calls for construction by the government of a pipe line from the Persian Gulf to the Eastern Mediterranean at a cost of approximately $150,000,000.

Jesse Jones, Secretary of Commerce, reported that Reconstruction Finance Corporation authorized a loan of $1,000,000 to PRC last August 13, and on October 7 made a commitment of an additional $30,000,000 loan. Of the $1,000,000 loan, he said, $100,000 has been disbursed to date.

Post-war Surplus Handling Being Carefully Planned

Large quantities of oil products which are expected to be declared surplus by the military services as our battle fronts lessen in number will be disposed of by the Treasury procurement division under plans in the making of which the industry will have a voice.

Treasury officials thus are following recommendations of Congressional committees which have studied post-war conversion problems, that in the disposition of surplus material every possible effort be made not to glut markets so as to handicap the return of industry to peacetime operations.

Few problems of any magnitude are foreseen in disposing of such surpluses as may occur between now and the end of the war, because of the shortages of supply and civilian need for many of the products which will be involved, but even the few problems that do arise will be minimized by a decision of the department to dispose of its materials in accordance with the regulations of the War Production Board, Office of Price Administration, Petroleum Administration for War and other control bodies.

After the war, it is planned to make a continuous study of probable surpluses, civilian shortages and the length of time it will take industry to reconvert to the production of each type of commodity.

A tentative program has been worked out for petroleum products, of which large inventories of lubricating oils, greases, fuel oils and gasoline are expected to be available eventually. Some of this will be in specially marked and coded government containers unsuitable

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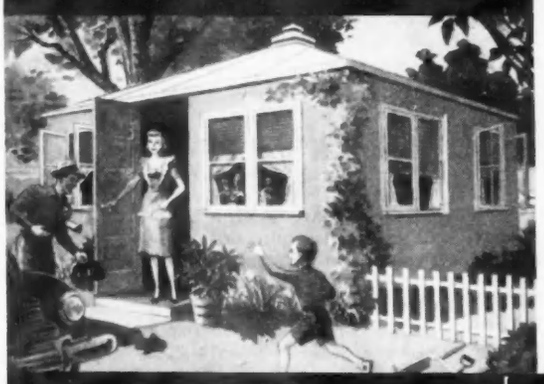

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for direct sale to consumers, and much of it may have to be reprocessed for use in civilian equipment, but it is planned to sell it under OPA and PAW regulations to the commercial trade, with consideration for programs of the Office of Civilian Requirements and WPB.

Serial Coupons to Strike At Black Market Tactics

Adoption of serially-numbered coupons for B and C gasoline rations is the latest device of the Office of Price Administration to combat black-market operations. The numbered coupons, proven effective with T rations, come in rolls like movie tickets, from which they are torn off and stapled in a cardboard cover for individual rations. Under the former plan, coupons came in sheets and were "tailored" for each application, the coupons torn off becoming waste which, in some instances, found its way into the hands of motorists.

The numbering of coupons will also identify stolen ones which may be taken to a different section of the country for sale or use.

However, motorists still will be required to endorse their license numbers on the face of the coupons, and loss of rations may result from failure to do so.

Natural Gas Statistics Set Forth in Bulletin

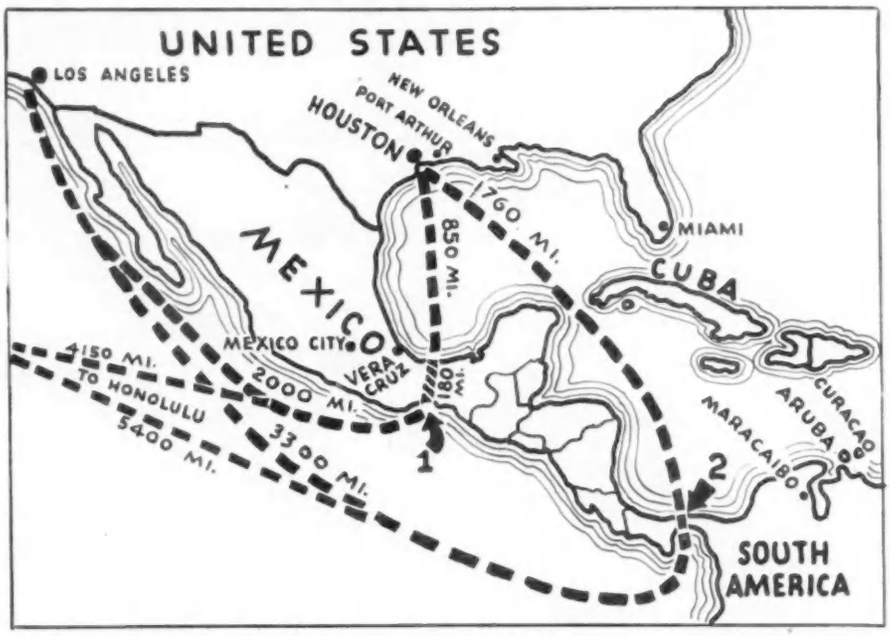
The Federal Power Commission has announced publication of a new 87-page report entitled "Statistics of Natural Gas Companies" containing financial and operating information on 118 gas companies which reported an aggregate book investment in gas plant of $1,759,882,373 as of December 31, 1942. This is the first such report issued by the commission and was compiled as a part of the Commission's administration of the Natural Gas Act

The report is similar in make-up and content to the commission's annual series entitled "Statistics of Electric Utilities" which has become a standard reference work for electric utility management, regulatory agencies, banks, investment houses, and students of the industry. "Statistics of Natural Gas Companies, 1942" is priced at 50 cents a copy and may be obtained only from the Federal Power Commission, Washington 25, D. C., to which all orders should be addressed enclosing remittance. In ordering, the new publication may be referred to as FPC S-33.

S. O. N. J. Buys Tankers

Purchase by Standard Oil Company (New Jersey) of eight 14½-knot tankers now being built for the Maritime Commission at the Sun Shipbuilding and Drydock Company yard at Chester, Pennsylvania, was announced March 3 by the War Shipping Administration.

The company will turn in 15 old tankers for an allowance of $10,778,640, which will constitute the down payment on the new ships, which will cost approximately $24,000,000. The tankers now building will average $3,000,000 each, less the national defense features. The WSA may continue the traded-in tankers in service for the war effort.



Plans of the United States government to build two 180-mile pipe lines across Mexico (indicated above by arrow 1) were without confirmation last week and were vigorously denied in various quarters. If the line ever materialized it would shorten considerably tanker routes from the Texas Gulf Coast to the Pacific Ocean. (Compare with the Panama Canal route indicated by arrow 2.)

Mexican Pipe Line Plan Denied by Washington

In quick succession during the week came reports of a gigantic pipe-line proposition, involving construction of two pipe lines across Mexico, one a 24- and the other a 36-inch line, with appendages relating that the oil for the line would be furnished by Superior Oil Company of California and Union Oil Company from Texas fields, supplemented by oil produced in Mexico, and prompt denials by governmental and private authorities that the story was anything more than a story.

PAW and the Navy disclaimed parentage of the idea or intent to pursue it. An official of the Superior Oil Company told THE OIL WEEKLY that it was without foundation insofar as his company was concerned. The amount of oil to be moved through the lines was set at 500,000 barrels per day and the combined production of Superior and Union in Texas is a small fraction of this amount. Students of the Mexican situation say that it would be impossible for Mexico to supply a material amount of the 500,000 barrels per day designated. Mexico produced only 35,200,000 barrels of oil last year and used most of it domestically. Most of it came from Poza Rica where present production is badly in need of additional wells. The reported line capacity thus is more than five times the total producing capacity of Mexico last year.

The story on the project said that the deal had been negotiated by Efrain Buenrostro, head of the Mexican government's petroleum agency, with the United States State Department, and PAW. The State Department, as the week closed, had made no comment.

The Mexican pipe line story apparently was born because of the obvious necessity of improving the Pacific Coast oil situation, now that war activities in that ocean are being intensified. Another "project" aimed at oiling the Pacific war is in Alaska where, however, it amounts to nothing more than a search for reserves with considerable doubt whether anything can be developed in time to be of great assistance to General MacArthur, Admiral Nimitz, et al.

Reportedly, there is a difference of opinion between the Navy Department and PAW over the most likely spot on which to find oil, with the Navy looking to development of its own reserves and PAW favoring drilling in the southwest peninsula, where several companies already have drilled without success.

Another indication of the increasing importance of the Pacific operations was given by PAW in an order specifying six federal war agencies which would have first call on available fuel-oil supplies. Heretofore given first call on motor fuel, the Army, Navy, Coast Guard, War Shipping Administration, Maritime Commission and Foreign Economic Administration now have similar preference in deliveries of fuel oil.

Principal effect of the action will be to assure those agencies adequate supplies of oil at coastal points, particularly on the Pacific Coast.

Marsh New Head of API Standardization Group

T. E. Swigart, of Shell Pipe Line Corporation, Houston, has resigned as national chairman of the API committee on the standardization of pumping equipment and engines because his duties no longer are directly concerned with producing problems, it has been announced by J. Edgar Pew, general chairman of the standardization program of the Institute's Division of Production. Swigart is succeeded as chairman by H. N. Marsh of General Petroleum Corporation, Los Angeles, who has been vice chairman.

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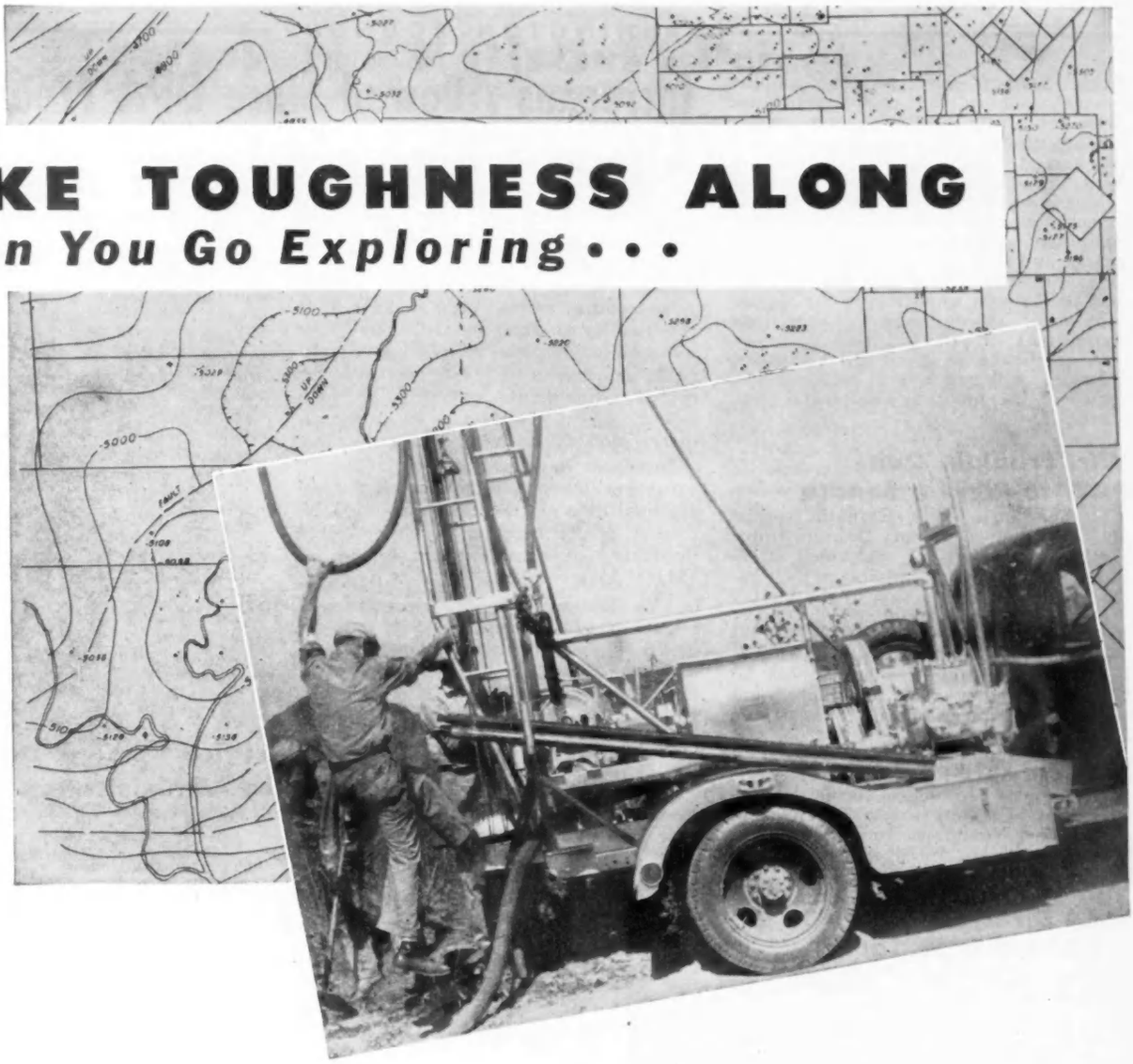

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work, Swigart has assumed an important role in the organization and activities of the Central Committee on Drilling and Production Practice, having served as its national chairman in 1930.

Marsh has been chairman of the engineer's subcommittee of the pumping-equipment committee for a number of years, and has been active on many other Institute committees. He is chairman of the subcommittee on the simplification of casing sizes (of the pipe committee).

W. S. Crake, of Shell Oil Company, Houston, will continue as national secretary of the pumping-equipment committee.

Wirt Franklin Quits PAW to Run for Senate

Resignation of Wirt Franklin, special field assistant to Deputy Administrator Davies, to "devote his undivided attention to his personal affairs" which include running for election to the United States Senate, was announced by PAW February 29.

In a letter accepting his resignation, Davies told Franklin that he did so "only with the greatest reluctance" and voiced the appreciation of Administrator Ickes and the PAW command of the services he had performed.

Franklin joined PAW in August, 1941, as director of production for District 2, later also becoming director in charge of the district office. In July of last year he was appointed a special field assistant to Davies.

IPAA Directors Meet This Week in St. Louis

A special meeting of the board of directors of the Independent Petroleum Association of America has been called for Thursday and Friday, March 9 and 10, at the Jefferson Hotel in St. Louis.

Purpose of this called meeting is to advise with the directors, and through them with the membership, regarding the legislative position on the price of oil and its products; to consider suggestions submitted by members and the government on a subsidy program to stimulate oil production; and to discuss developments on the national foreign oil policy and other matters that may properly come before the meeting.

A committee composed of members of various branches of the oil industry also will meet in St. Louis Tuesday and Wednesday, March 7 and 8. This committee will analyze the suggestions made on subsidies for the petroleum industry so they may be clearly presented to the directors and members of the association at their special meeting.

Pacific Coast API in Spring Meet March 23

The spring meeting of the American Petroleum Institute Pacific Coast District, Division of Production, will be held at the Biltmore Hotel, Los Angeles, March 23. An address by J. R. Pemberton, former oil umpire of California, is scheduled according to Program Chairman William L. Jarvis of The Texas Company. Arrangements are in charge of J. G. Creed of Halliburton Oil Well Cementing Company.

Increases Allowed Since OPA Freeze Affect 48 Areas and Average 13 Cents

Price increases have been allowed by the Office of Price Administration on approximately one fifth of the United States' current crude production since price ceilings were frozen in 1941, it is revealed by an analysis of OPA actions on applications for relief. Forty-eight fields or areas in various states have received adjustments covering an estimated daily production of approximately 866,000 barrels.

Increases have ranged from 2 to 25 cents per barrel, but averaged, for all regions, 13 cents, with an estimated increase in the revenue of the affected producers of something in excess of 111,000 barrels a day.

The first adjustment was made in Oklahoma, in December, 1941, and increases since granted have covered fields in Texas, the Pennsylvania Grade area, Louisiana, New Mexico, California, Ohio, Kentucky, Arkansas, Wyoming, Michigan, Illinois, Mississippi and Nebraska.

The daily production covered by OPA price increases ranged from 7 to 297,300 barrels daily, and the resulting increase in daily revenue ran from $1 to $52,028; of the 48 areas adjusted, however, the daily revenue was increased more than $1000 in only 14 and in 17 ran less than $100.

The story of OPA's adjustments of crude prices is told in the accompanying table, prepared by the economic analysis section of the petroleum branch of the fuel division.

Largest single producing area to receive increased prices, was the 17½-cent increase given California heavy crudes on April 1, 1943. This affected 297,300 barrels daily. The next largest quantity of oil affected by raises was the North Texas, where 140,200 barrels daily received an average increase of 7 cents per barrel through the combination of a 3-cent boost that was followed a few months later with a 4-cent increase.

Adjustments in Crude Oil Price Ceilings Allowed By the Office of Price Administration

Amendment Number	Area Affected	Effective Date	PRICE PER BARREL			Daily Production Week Ended January 22, 1944 (g)	Total Daily Amount of Increase
			Old	New	Increase		
RPS 88 (a)	Carter Co., Okla.	12/ 5/41	$ 1.20	$ 1.25	$ .05	21,485 (e)	$ 1,074
(a)	North Texas	12/11/41	1.18	1.21	.03	140,200	4,206
3	Pennsylvania Grade	3/25/42	(b)	(b)	.25	66,550	16,638
7	Richie, La.	4/23/42	1.08	1.18	.10	600 (e)	60
12	Loco Hills, N. Mex.	5/13/42	1.04	1.12	.08	3,100	248
	Tussy, Garvin Co., Okla.	5/13/42	1.15	1.25	.10	(k)	(k)
20	University, La.	7/ 2/42	1.46	1.48	.02	6,850	137
33	Ventura Ave., Calif.	10/23/42	1.165	1.195	.03	1,000 (d) (f)	30
37	Lima, Ohio	11/ 2/42	1.25	1.50	.25	1,000 (d) (f)	250
(e)	Logsdon, Ky.	1/ 4/43	1.24	1.39	.15	100 (f)	15
64	Rincon, Tex.	2/ 3/43	1.30	1.45	.15	7,600	1,140
	Olla, La.	.....	1.30	1.35	.05	9,600	480
	Sebree, Ky.	.....	1.25	1.32	.07	55 (e)	39
	Shields, Tex.	.....	1.25	1.35	.10	396 (e)	40
	Sour Distillate, S. Ark.	(i)	1.15	1.25	.10	6,920 (m)	692
71	Black Oils, Wyo.	2/26/43	(b)	(b)	.15	36,500 (j)	5,475
87	Heavy Crude, Calif.	3/26/43	(b)	(b)	.175	297,300 (f)	52,028
90	S. Bangor, Mich.	4/13/43	1.17	1.27	.10	272 (e)	27
94	Elk Basin, Wyo.	4/28/43	.82	.90	.08	11,474 (e)	918
	Plymouth, Ill.	.....	1.05	1.15	.10	250 (f)	25
97	North Texas	5/22/43	1.21	1.25	.04	140,200 (n)	5,608
	Tinsley, Miss.	.....	1.065	1.18	.114	39,350	4,486
98	Ville Platte, La.	5/22/43	1.20	1.30	.10	12,500	1,250
107	Talco-Sulphur Bluff, Tex.	5/28/43	.79	.84	.05	29,450	1,473
109	Panhandle, Tex.	6/16/43	1.15	1.22	.07	97,900	6,853
118	Big Sandy, Ky.	8/ 3/43	1.38	1.43	.05	2,200 (f)	110
	Sebree, Ky.	.....	1.32	1.37	.05	55 (e)	3
	Belton, Ky.	.....	1.25	1.37	.12	7 (e)	1
	Spottsville, Ky.	.....	1.32	1.37	.05	37 (e)	2
	Owensboro, Ky.	.....	1.32	1.37	.05	4,100 (l)	205
	Bowling Green, Ky.	.....	1.12	1.17	.05	350 (f)	18
	Butler, Ky.	.....	1.27	1.32	.05	60 (f)	3
	Woodsboro, Tex.	.....	1.25	1.35	.10	375 (e)	38
MPR 436 1	Pickens, Miss.	9/ 8/43	1.005	1.18	.175	6,100	1,068
2	Smart, Ark.	9/10/43	1.08	1.18	.10	4,450 (h)	445
3	Franklin, Pa.	5/17/43	3.43	3.63	.20	50 (f)	10
6	Smackover, Ark.	1/12/44	.83	.98	.15	11,350	1,703
	Headquarters, Mich.	.....	1.39	1.48	.09	4,000	360
	Raceland, La.	.....	1.09	1.24	.13	2,050 (e)	267
	Bayou des Allemands, La.	.....	1.09	1.24	.13	1,250 (e)	163
	Gibson, La.	.....	1.19	1.24	.05	5,300	265
	Lake Arthur, La.	.....	1.18	1.30	.12	300 (e)	36
	Tepetate, La.	.....	1.18	1.20	.02	2,450	49
	Abbeville, La.	.....	1.17	1.30	.13	150 (e)	20
8	Salt Creek, Wyo.	2/12/44	1.15	1.20	.05	12,050 (o)	603
	Lance Creek, Wyo.	.....	1.12	1.25	.13	18,800	2,444
	Falls City, Neb.	2/21/44	.90	1.05	.15	.....	.....
	Barado, Neb.	.....	.90	1.05	.15	.....	.....
	Totals	.....	.....	.....	.....	865,936	111,005
	Average	.....	.....	.....	.13		

(a) Allowed prior to issuance to RPS 88. (b) Prices vary depending on field. (c) Daily at end of 1943; The Oil Weekly. (d) Estimated portion of field production affected by increase. (e) Increase allowed under pricing of sales at new points. (f) Estimate made at time price adjusted. (g) American Petroleum Institute estimate. (h) July, 1943. (i) Applicable to McKamie, Dorcheat, Macedonia, and Big Creek Fields. (j) Estimated. (k) Included with Carter County, Oklahoma, above. (l) August, 1943. (m) March, 1942. (n) Not included in total; included in (a) above. (o) Exclusive of estimated 500 barrels daily of Tensleep production not increased in price.

Refiners Continue Dipping Into Crude Stocks; Gasoline Storage Gain Slight

Former trends have continued, and the industry still is experiencing difficulty in meeting the heavy demands for its products. Crude oil production was stepped up in the week ended February 26 to 4,423,000 barrels daily, a new high for this year and within 13,000 barrels of the all-time peak of last November, and yet all crude produced is being currently consumed at refineries, in addition to which there are substantial withdrawals from storage. In the week of February 19, latest data available, 695,000 barrels of crude were withdrawn from storage, in continuation of steady withdrawals since last Christmas, which by now have amounted to 4,000,000 barrels, an average of 500,000 weekly or 70,000 daily. Present stocks of 237,511,000 barrels (February 20) are about 3,000,000 barrels above those held a year ago.

The production of February 26 week was 550,000 barrels a day or 14 percent greater than that in the like week a year ago, with the Southwest and California accounting for the expansion.

Production of gasoline in the week ended February 26 was greater than in the corresponding week last year by 374,000 barrels per day or 25 percent, in averaging 1,883,000 barrels daily, in line with sharply higher demand. During the week there was only a customary seasonal accumulation of gasoline in storage, leaving stocks low in relation to requirements. The inventory of 85,248,000 barrels at week-end was 7,500,000 barrels or 8 percent less than the 92,772,000 barrels held a year earlier.

Gasoil and distillate fuel production was up 32,000 barrels daily in the week of February 26 in averaging 651,000 daily, and the output was 55,000 barrels a day or 9 percent greater than in the like week a year ago. Consequently, withdrawals from storage were slowed and averaged only 6,000 barrels a day for the week. However, the 33,766,000 barrels left on hand was nearly 2,000,000 barrels or 5.4 percent less than that held a year before.

Residual fuel oil production was stepped up 10,000 barrels a day and in averaging 1,280,000 barrels daily was 143,000 barrels per day or 12.5 percent greater than in the corresponding week last year. Nevertheless, exceptionally heavy demand forced continued withdrawal from storage, and stocks were reduced at the rate of 80,000 barrels a day. The 51,387,000 barrels in storage February 26 was 19,000,000 barrels or 27 percent less than the 70,516,000 barrels held on February 27 last year.

Scarcity continues to rule the markets. Light fuel oils remain scarce on the East Coast, especially in New England. Other products also are generally in greater demand than supply.

In the Middle West there has been slowing of heating oil demand, with advance of the season, and primary concern now is for accumulating supplies of gasoline and tractor fuel to meet seasonally larger requirements. In line with that, storage facilities are being converted from use for heating oil to use for gasoline. Agricultural demand for gasoline and tractor fuel soon will be heavy, and refiners and marketers foresee difficulty in supplying it.

Mid-Continent refiners also note slowing down of demand for heating oils, but lubricants continue in strong demand, while residual fuel oils are being readily absorbed by railroads and in-

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED March 4	February 26
Alabama	25	25
Arkansas	78,800	78,750
California	825,750	827,150
Long Beach	29,850	29,700
Midway-Sunset	56,650	56,500
Kettleman Hills	43,900	43,750
Wilmington	103,000	102,000
Rest of State	592,350	595,200
Colorado	7,250	6,900
Florida	50	50
Illinois	215,600	206,200
Salem	25,300	26,200
Louden	33,000	32,400
Other New Pools	145,200	135,800
Old Pools	12,100	11,800
Indiana	13,150	12,450
Kansas	272,800	279,700
Kentucky	19,500	20,100
Louisiana	359,700	360,600
North Louisiana	76,000	77,200
South Louisiana	283,700	283,400
Michigan	52,100	53,500
Mississippi	44,200	43,850
Missouri	100	100
Montana	24,850	24,968
Nebraska	1,190	1,200
New Mexico	113,050	113,000
New York	14,550	13,200
Ohio	8,550	9,050
Oklahoma	327,600	324,300
Oklahoma City	46,700	47,000
Seminole Area	68,250	67,550
Rest of State	212,650	209,750
Pennsylvania	40,850	35,450
Tennessee	30	30
Texas	1,886,000	1,916,500
Upper Gulf Coast	515,100	516,550
East Texas Field	375,750	390,700
Rest of East Texas	116,800	116,900
Lower Gulf Coast	195,500	193,100
Southwest Texas	75,350	75,250
South Central Texas	20,000	20,000
West Texas	349,200	362,100
North Texas	141,500	140,000
Panhandle	96,800	101,900
Utah	12	15
West Virginia	8,300	8,000
Wyoming	93,850	95,400
Total United States	4,407,857	4,433,488

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	49,861	11-14	95,857	1- 3
1943	[1]4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	46,187	11-27	72,881	1- 2
1944	4,423	2-26	[1]4,453	1- 1	240,992	1- 1	85,248	2-26	42,310	1- 1	57,330	1- 1
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 8
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,381	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-13	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,228	2-12	237,511	2-26	76,302	1- 1	33,766	2-26	51,387	2-26

TRENDS OF 1943 AND 1944

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Gasoline Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1943:									
January 2	3,871	3,734	233,938	10,957	82,420	4,285	42,913	7,683	72,881
January 30	3,826	3,698	233,863	10,339	88,830	3,888	37,057	7,452	70,763
February 27	3,873	3,709	235,217	10,566	93,157	4,230	32,939	7,839	70,140
March 27	3,896	3,742	239,126	10,231	94,079	3,541	30,980	8,018	67,938
April 24	3,913	3,737	242,035	10,583	91,001	3,954	31,142	8,168	67,455
May 29	3,970	3,679	245,752	10,656	83,937	3,798	32,274	7,672	67,682
June 26	3,955	4,015	242,657	11,092	79,589	3,876	34,044	8,126	67,960
July 31	4,133	3,788	238,420	11,127	74,977	3,765	36,363	8,478	66,877
August 28	4,196	4,227	236,170	12,420	72,525	4,351	37,928	8,732	67,250
September 25	3,344	4,156	233,013	12,206	70,024	4,608	40,328	8,560	66,659
October 30	4,383	4,176	237,219	12,813	69,297	4,642	44,591	7,968	63,838
November 27	4,414	4,261	239,761	12,638	69,980	4,379	46,187	8,633	62,143
December 25	4,363	4,185	241,310	12,597	74,024	4,457	43,791	8,689	57,596
1944:									
January 1	4,357	[1]4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 29	4,409	4,359	240,251	13,427	81,085	4,054	37,266	8,889	52,857
February 5	4,400	4,324	239,145	13,192	81,784	4,138	36,023	9,087	52,734
February 12	4,399	4,228	238,206	13,101	82,322	3,946	34,854	9,000	52,453
February 19	4,385	[5]4,404	237,511	[5]13,526	83,931	4,331	[5]33,809	8,881	[5]51,948
February 26, 1944	**4,423**	**4,377**	.....	**13,183**	**85,248**	**4,558**	**33,766**	**8,952**	**51,387**
February 27, 1943	3,873	3,683	[4]234,562	10,565	92,772	4,171	35,691	7,954	70,516
Change:									
In week	+38	−27	−695	−343	+1,317	+227	−43	+71	−561
In year	+550	+694	+2,949	+2,618	−7,524	+387	−1,925	+998	−19,129
In year	+14.2%	+18.8%	+1.3%	+24.8%	−8.1%	+9.3%	−5.4%	+12.5%	−27.1%

[1] All time peak. [2] Lowest since April, 1922 [3] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [4] Stocks February 20, 1943. [5] Revised.

CRUDE OIL AND REFINED PRODUCT PRICES

Since prices of crude oil and refined products are frozen, with few revisions being made in authorized ceilings, *The Oil Weekly* is discontinuing former practice of publishing these prices in the first issue of each month. When prices again become subject to normal changes, publication of the schedules will be resumed.

Meanwhile, news reports in this section will fully cover authorized changes in ceilings, revisions in crude-price postings of purchasers, and any important changes in prices of refined products quoted by refiners, as well as other important market developments.

For prices last published in *The Oil Weekly* see issue of February 7, 1944, pages 42-43.

dustries. Gasoline is available in adequate volume, but the future is expected to bring scarcity, as spring demands arrive.

On the Gulf Coast there has been no easing of the tight markets for practically all products. Refineries continue operating at or near capacity, but stocks remain very low in relation to current and prospective demand.

Magnolia Completes Line From West Texas

Pipe-line outlet for West Texas fields was increased by 42,000 barrels daily through completion of Magnolia Pipe Line Company's 337-mile 12-inch carrier from Midland to Corsicana and parallel the company's original 8-inch looped trunk line that will continue to handle 28,000 barrels daily. Construction of the 12-inch was completed March 1, or within a period of four months, and oil had been placed in the line as work progressed, thus advancing the date of actual operation. The three main-line stations were completed in advance of the line. This new outlet will handle considerable oil for others on a common-carrier basis, and will also supply the Big-Inch with 10,000 barrels daily. The line work was contracted to Oklahoma Contracting Company and Jones & Brooks.

Sinclair Building Line In Southwest Texas

Construction was started the past week on Sinclair Refining Company's recently authorized extension of its Southwest Texas system from Freer Station, Duval County, to the Washburn Field, LaSalle County, involving 35 miles of 6-inch pipe. O. C. Whitaker Company has the contract.

Sinclair Refining Company stepped up the capacity of its refinery near Corpus Christi on March 1 from 10,000 to 18,000 barrels daily through completion of high-octane gasoline units, and by May 1 will be processing 25,000 barrels daily.

☆

C. A. McCOLLUM has resumed his duties as district manager for The National Supply Company at Houston, after eight months in Washington as chief of facilities review in the Transportation Division of PAW.

International Developments

Russians Not Interested In Chilean Exploration

A Chilean government agency in charge of oil explorations in that country advises that the work now going on there is not under Russian auspices, as reported recently. The fact is that two geological crews and two geophysical crews of the United Geophysical Company, have been operating in Chile for more than a year, and are still working there—"to the complete satisfaction of the Chilean government instrumentality."

Gulf Company Abandons Well in Nicaragua

American International Fuel and Petroleum Company (Gulf Oil Corporation) late in February abandoned its stratigraphic information well drilled to 6700 feet near Puerta Cabezas, Nicaragua. Geological and geophysical work that has been in progress in the area for some time will be continued without interruption during the current year. The company and Atlantic Refining Company, jointly hold "several million acres" comprising a concession originally obtained from the government of Nicaragua by Don Miguel d'Escoto. The concession carries blanket exploration rights, without stipulations as to time or location of drilling operations.

Three Counties in Nova Scotia to Get Tests

Lion Oil Refining Company has completed arrangements with Nova Scotia customs authorities to move drilling equipment to a location staked near the town of Mabou, on the west side of Cape Breton Island, Nova Scotia. The company has 800 square miles of leases, secured under a new license law enacted by the provincial legislature to encourage petroleum explorations. In the same province Sun Oil Company will put down one or more tests in Cumberland County, as soon as weather conditions permit. Its first well will be in central Cumberland County, north of the Cobequid Mountains, in the vicinity of Spring Hill. S. C. Nickle of Calgary, Alberta, has also been licensed to drill wildcat wells in Nova Scotia, and plans to locate his first well in northern Hants County, southeast of the town of Walton, on property previously leased as the result of geophysical surveys. Both the Lion and Sun have geophysical data on the subsurface structure of the province. All three operators plan to spud their first wells before the middle of April.

New Structure Found In Tampico Area

Petroleos Mexicanos officials have revealed that a large new structure has been outlined in the Panuco Arch district in the vicinity of Tampico, and that plans have been made for putting down exploratory holes. Geological and geophysical findings indicate that the structure is very likely bounded by fault lines, making a diamond-shaped pattern. The structure, as mapped, extends well southward into the state of Vera Cruz. On the basis of past experienced in the Tampico region, where structure usually guarantees the proving of production later, the government expects to find rich pays in the new locality, in the Upper Tamaulipas and Agua Nueva limestone zones—equivalents of the Fredericksburg-Washita-Eagle Ford section in Texas. They have appraised the expected new field as capable of boosting Mexican production by as much as 15 percent. The first test will be drilled "as soon as necessary equipment is available."

Fifteen Tests Projected Offsetting Cannar Wells

Sweet Grass Oils Limited, Canadian operating company, has contracted with General Petroleums, drilling contractors, to put down 15 wells in the Vermilion field, on leases adjoining the Cannar holdings in that locality. The first well to be drilled will be spudded immediately, offsetting Cannar wells 15, 16 and 26.

Alberta Foothills Area Are Heavily Leased

More than 500,000 acres of territory have been leased in recent weeks in the Brazeau River area, some 150 miles west and south of Edmonton, Alberta. Several large companies have checkerboarded the block, and extensive explorations, including test drilling, are expected to get under way when weather permits. Geological parties made surveys in the region during the summer of 1943.

Russian Volga Area Fields Are Active

The Volga region oil fields of Russia have been actively developed for some time and now are exceeded in production only by fields of the Baku district, according to the foreign press.

In the region extending east of Kuibyshev, production has been increased threefold from prewar levels, the reports state, and output now exceeds that of the Emba district in Kazakhstan.

An interesting feature of the development in the Volga region, as described, is the drilling of wells without use of casing. Pipeless wells as deep as 1000 feet are said to be in use.

Shell Wildcats in Colombia Below 9000 Feet

More than 9000 feet of hole is reported to have been made before the end of January in Shell Oil Company's wildcat in the San Angel concession, Department of Magdalena, Colombia. This is the ninth hole in Colombia to go below 9000 feet, four going more than 10,000 feet. Three of them have been drilled by Shell, and one by Socony-Vacuum Oil Company. Shell's Brilliante 1, in the Magdalena region, was testing at 10,250 feet on January 17, and in the Dificil concession the same company was testing in another well at 6120 feet. Before the end of the month Richmond Oil Company's Retiro 1 was drilling below 5000 feet in Oligocene shale.

U. S. Field Operations

Illinois Basin

Hamilton County Pool Given New Production

The prolific producing Bungay pool of Hamilton County, Illinois, was given a new production horizon last week at National Associated Petroleum Company's York Tibbs Community 2, SW NW NW 35-4s-7e. Pay was found in McClosky lime topped at 3428 feet and after 3500 gallons of acid, the well pumped 85 barrels of oil and no water in 12 hours. Operators continue testing.

Jefferson County: The Texas Company's Greene 1, E½ SE SE 15-1s-3e, was listed as the discovery of the West Divide pool after completion in the McClosky lime. Treated with 3000 gallons of acid, the well pumped 85 barrels of oil in 24 hours from McClosky lime. Total depth of hole is 2862 feet.

East of the Divide field in Farrington township, Gulf Refining Company's Milford Burkett 1, NE NE 23-1s-4e, pumped 14 barrels of oil and nearly 100 barrels of water in 24 hours from McClosky lime, during early tests, but later made 30 barrels of oil and 83 barrels of water. Pay break was at 2846-56 and 2892-2900 feet.

Magnolia Petroleum Company's new wildcat, DeWitt 1, NW NW NW 16-2s-3e, is drilling below 2300 feet.

White County: Gulf Refining Company's Garfield Parsons 1, SW SW SW 7-4s-14w, is listed as the discovery well for a new producing horizon in the Phillipstown pool. Completed on pump after a 60-quart shot, well made 60 barrels of oil and 10 barrels of water from Paint Creek sand, originally believed Aux Vases, at 2784-2816 feet. Total depth is 2826 feet.

Hamilton County: Three miles southwest of the Dahlgren field, Gulf Refining Company is preparing to drill Manford-McGeath 1, NE NE SE 17-4s-5e, a wildcat test.

Wayne County: Gulf Refining Company's Winona 1, SW NW 12-1s-8e, surprised operators when after 1000 gallons of acid in McClosky lime at 3102-14 feet, it failed to produce. Re-acidized with 3000 gallons, the well started flowing and made 162 barrels of oil in 3½ hours. On latest test the well was flowing 134 barrels in 21 hours through tubing.

Coles County: C. A. Beckman's discovery, Herman Community 1, NE SW SW 25-12n-7e, just south of Mattoon, has been completed in Aux Vases sand at 2004-08 feet after 30-quart shot. It is pumping 21 barrels oil per day.

H. V. Daugherty has started rigging tools for Reinhart 1, NE SE 29-12n-8e, 1½ miles southeast of the Beckman discovery.

Kentucky

A new producing horizon for the East Poole pool of Webster County, Kentucky, was recorded at Sinclair Wyoming Oil Company's Lillian Ashly 1, 10-N-23. Pay was in Tar Springs sand at 1798-1811 feet and after a 10-quart shot, the well pumped 205 barrels in 24 hours. With total depth 1811 feet, the well is the second in the new area. The first produced from both McClosky lime and Cypress sand, but production was much smaller than the Tar Springs discovery.

Henderson County: Snowden & McSweeney have completed a northwest offset to the recent discovery extending the Utley pool. Utley 1, 16-P-21, flowed 336 barrels of oil and no water from McClosky lime at 2558-67 feet after 4000 gallons of acid. The flow was through tubing choke.

Union County: The Texas Company and Ashland Refining Company are still waiting on cement at Culver 1, 12-P-20, 2½ miles northeast of production in the Uniontown pool. The well promises to extend the pool with good McClosky production.

Kansas

Zenith Pool Extension Into Reno County Seen

A northeast extension to the Zenith pool which will carry production from Stafford into Reno County was assured as Transwestern Oil Company's Volker 1, SE NE 36-23-11w rated top potential of 3000 barrels a day from Viola lime at 3678-3713 feet after acidizing.

Plains Exploration Company established commercial pay in the Zenith West area of Stafford County when Figger 1, C E½ SE NE 8-24-11w tested Viola at 3787 feet for potential of 2385 barrels daily after acidizing.

Barton County: Continental Oil Company and Phillips Petroleum Company's Schugart 1, SE NW SW 4-18-14w, outpost to the Boyd field, topped Arbuckle at 3459 feet and stopped at 3476 feet. On test the well swabbed 60 barrels oil in two hours after a natural fill up of 2810 feet. It is waiting pumping unit.

F. C. Koch opened production a mile north of the Feltes pool as Schauf B-1, C NW SW SE 2-16-12w pumped 135 barrels in 14 hours. It is bottomed in Arbuckle lime at 3344 feet.

Ellis County: A wildcat in the Fort Hayes Frontier Historical Park which evoked opposition from a group claiming that oil would "ruin" the region, resulted dry. It was Cities Service Oil Company et al's State Park 1, NWc SE 5-14-18w, abandoned in Arbuckle at 5039 feet.

Stafford County: Following W. P. Faulkner's strike at Cadman, Atlantic Refining Company is going back into an old hole, Cornwell 1, NE SW 4-25-13w, wildcat abandoned several years ago at 4270 feet, for a Viola test around 4100 feet.

Nebraska

Nemaha County Test Has Slight Show in Hunton

Ohio Oil Company's Lamparter 1, a Forest City Basin wildcat in the NE SW 4-2s-14e, reported a slight oil show in the Hunton at 3500 feet and is drilling ahead for a test of Viola and Arbuckle, the latter expected at 4000 feet. The test is a geophysical prospect 15 miles north of the Falls City pool, in the northeast corner of Nemaha County, Nebraska.

Oklahoma

West Edmond Extension Considered Important

Three extensions to the West Edmond field, Oklahoma County, one of which carried production into Canadian County for the first time, featured Oklahoma operations which generally were slowed down by heavy week-end rains. Operators consider the discoveries important and presage renewed activity in the Anadarka Basin west of the Nemaha Ridge.

Dickey Oil Company's Young 1, C SE NE 25-14n-5w, Canadian County, is a mile northwest extension, the well flowing 329 barrels of oil in three hours from Hunton lime topped at 7000 feet, total depth 7019 feet.

A mile north of production, Fox & Fox's Peters 1, C NE SW 19-14n-4w, flowed better than 100 barrels through tubing choke from Hunton topped at 6910 feet; perforations at 6894-6940 feet and total depth 7010 feet.

Fox & Fox tended the West Edmond pool a mile southeast when Keefer 1, C NW NW 4-13n-4w, flowed 100 barrels an hour through 1-inch tubing choke from Hunton at 6750-6846 feet. The well, pinched back to 300 barrels a day, has total depth of 6914 feet.

McClain County: Carter Oil Company's deep test on the eastern rim of the Anadarko Basin, Cottingham 1, C SE SW 4-7n-3w, is drilling below 11,056 feet in the Simpson after slight shows were reported in the second Wilcox. The company's Ranch 1, C SW NE 13-8n-4w, near Blanchard, about 3½ miles southeast of Cottingham 1, is shut down at 10,536 feet awaiting outcome of the latter. Oil stains showed in core at 10,462 feet but a second core at 10,515-23 feet recovered dry white sand.

Cleveland County: Mid-Continent Petroleum Corporation's two offsets to its Harris 1, discovery well in the new West Moore pool, are being drilled "tight" with no explanation given for this unusual procedure in connection with offsets. Tubbs 1, NE SW SE 29-10n-3w, was last reported drilling below 8316 feet and Harris 2, NE SW 29-10n-3w, a location north of the discovery, was last reported making hole below 7210 feet.

Grady County: Skelly Oil Company's Goodwin 1, C SE NW 8-5n-8w, deep test northwest of the Chickasha gas field, is checking low with the field markers and is drilling below 7865 feet in shale. Started December 1 it has been delayed by several bad fishing jobs. Test, north of the gas field, if successful will more properly be an east extension to the Cement field in Caddo County. It is projected to 10,000 feet or deeper.

Logan County: Gulf Oil Corporation's Sara 1, SE NE NE 21-17n-3w, 6 miles east of the Crescent pool, was drilling at 4814 feet in sandy shale and carrying 2800 feet of oil. Layton was topped at 4723 feet.

Coal County: Six miles southeast of the Centrahoma field Amerada Petroleum Corporation et al's Johnson 1 wildcat, SW SE SW 6-1n-10e, is drilling below 7423 feet after topping Mayes lime at 6930 feet and Hunton at 7154 feet.

Rocky Mountain Area

Critical Stage Reached By Two Tensleep Tests

Continental Oil Company's Unit 1, C SE NE 11-46n-99w, in the Little Grass Creek gas field, Wyoming, has drilled to 6131 feet, 26 feet in Tensleep sand, and is testing a showing of oil in top of the Tensleep at 6105 feet. Little Grass Creek produces gas from the Frontier formation at 2700 feet and this well is the first to drill the lower horizons.

Gebo Dome: A second producer appears imminent in the recently discovered Gebo Dome field in Continental Oil Company's Unit 2, SW SW NE 23-44n-95w, which is coring for the Tensleep at 4714 feet. The well topped the Embar at 4535 feet and drilled 120 feet of saturated lime. Production string will probably be cemented in top of the Tensleep and the well produced through perforations from the Embar. Unit 2 is ¼ mile north of Unit 1, discovery well of the field which produced 1080 barrels of oil initially from the upper Embar at 4735-4842 feet, flowing through ¾-inch choke on 2½-inch tubing.

Little Buffalo Basin: Stanolind Oil & Gas Company's Unit 1, SW SW NE 34-38n-100w, on the west dome of the Little Buffalo Basin field, Park County, Wyoming, encountered water in the Tensleep and Madison, and is drilling ahead at 5970 feet to test all possible formations. Top of the Tensleep was logged at 4805 feet and the Madison at 5576 feet. It is 3½ miles northwest of the Goodstein discovery which produced 140 barrels of oil initially from the Tensleep at 4965 feet.

West Texas

Small Discovery Shows In Shafter Lake Area

The Texas Company's Pattillos 1, Andrews County wildcat, 2½ miles southeast of Shafter Lake, was showing for a small discovery from the Grayburg section of the Permian in swabbing 20 barrels of oil and 5 barrels of rotary fluid on 8-hour test from broken saturation at 4276-4342 feet. It will be deepened to the San Andres. This wildcat is 3½ miles southwest of Signal Oil & Gas Company's Fisher 1, recently completed 50-barrel pumper from San Andres at 4593-4628 feet.

Cities Service Oil Company assumed obligation to start a 7500-foot test by November in acquiring Empire-Southern Gas Company's lease on Sections 9, 10 and 11, Block 14, situation west of the above prospective discovery.

Crane County: Gulf Oil Corporation's Waddell et al 45, first McKnight lime producer for the Sand Hills field, flowed 11,741 barrels of 35-gravity oil, gas-oil ratio of 975/1, on open-flow potential, based upon 6-hour open test, from saturation at 3150-90 feet with the well bottomed at 3230 feet. The performance of this well has resulted in survey of nearly completed wells in the 4400-foot Clear Fork with the view of perforating the upper pay, if indicated. The McKnight pay will be confined to the lower levels of the structure, and the Holt zone also had possibilities down dip.

Property Sale: Harry Adams and C. T. A. Bradley sold their jointly owned properties in West Texas, involving 40 flowing and pumping wells on 1640 acres with an allowable of 1600 barrels daily, to G. E. Hall and associates for $1,000,000, including $400,000 cash and balance from production. The leases are in Andrews, Gaines, Ward and Winkler Counties.

Winkler County: Stanolind Oil & Gas Company's Sealy-Smith 1, recent oil strike from the Clear Fork, penetrated the oil zone in drilling to 6305 feet, and will set 7-inch for completion. This wildcat made its best showing in flowing 10 barrels of 43-gravity oil hourly with 1,500,000 feet of gas daily when tester was used at 6088-6133 feet. November lease expirations in sections adjoining the company's large lease block on the north will hasten the exploration of outlying acreage. Sinclair Prairie Oil Company's Campbell 1, 3½ miles southeast of nearest production, was drilling lime at 10,019 feet.

Keystone-Ellenburger: Sid W. Richardson and Perry Bass' Walton 10-E, south offset to the deep discovery for the Keystone structure, entered Ellenburger at 9099 feet, being 120 feet high to the single completion and the highest of the group of tests underway, and was coring at 9130 feet. Amon G. Carter and Pure Oil Company's Walton 3-C, north offset to their discovery, logged only 206-foot of gas-cap in entering the oil zone at 9520 feet in Ellenburger, topped at 9314 feet, or 88 feet low. Drill-stem test at 9508-30 feet yielded 45 barrels of 48.5-gravity oil and distillate in 45 minutes, with gas volume rated at 8,500,000 feet daily. The thinning of the gas cap placed the top of the oil pay only 13 feet low to the discovery. Sinclair Prairie Oil Company's Walton 4-A, northwest outpost that entered the Ellenburger gas cap at 9163 feet, or 68 feet high, halted at 9682 feet to run electrical formation survey and casing to complete.

Wheeler-Ellenburger: Mid-Continent Petroleum Corporation's Wheeler 1, ½-mile northeast of the pool's discovery, entered Ellenburger at 10,570 feet, or 48 feet low, and logged good oil saturation in cores at 10,585 to 10,723 feet. The discovery took in 204 feet of the Ellenburger without reaching water. Stanolind Oil & Gas Company and Shell Oil Company's Wheeler 1-A, ½-mile west of their discovery, had not reached the Ellenburger in coring at 10,642 feet.

West Central Texas

Gas With Oil Spray in Stephens County Outpost

A gasser with oil spray from Ellenburger was encountered by Phillips Petroleum Company's Wild 1, NW NE NW Section 58, B.A.L. Survey, Western Stephens County outpost, after using 2000 gallons of acid in dolomite at 4362-75 feet. The well tested 5,000,000 feet of gas with considerable oil spray, showing 600 pounds closed-in pressure. More acid may be used to try for an oil producer. Wild 1 is 2500 feet southeast of Bend production in the Ibex field, which straddles the Shackelford-Stephens County line, and top of Ellenburger was called at 4346 feet with an elevation of 1367 feet.

Texas Pacific Coal & Oil Company's Brown 3-C, west offset to the company's Mississippian oil discovery for the Brownville pool, Northern Stephens County flowed briefly after using 2000 gallons of acid through perforations at 4326-50 feet in Mississippi, topped at 4340 feet, being 61 feet low. Water made its appearance, then the well swabbed 105 barrels of oil and 116 barrels of water on 17-hour test, and will be equipped to pump. Shell Oil Company's Allen 1, southeast corner SP 14, Block 2, offset for the Ivan district, drilled to Ellenburger at 5292 feet, then plugged back to 3275 feet with 4½-inch at 3264 feet to flow 65 barrels of oil and 13 barrels of water, on 18-hour natural test. On later swabbing test the water increased to 40 percent.

North Texas

Oil Saturation from Denver Area Outpost

Sinclair Prairie Oil Company's Templeton 1, outpost for the Denver area, Montague County, recovered 540 feet of oil-cut mud, 1530 feet of oil and 810 feet of salt water when tester was used at 6067-77 feet in Bend lime, topped at 6047 feet, or 2 feet high to its Denver pool discovery, situated 7/8-mile to southeast. The new test logged oil saturation in conglomerate at 6117-27 feet, and will run tester before continuing to the Viola and Simpson, both prospective producing zones for the area.

Whitaker Oil Company's Donald Bros. 1, A. J. Cook survey, promises to expand the Hildreth field about one mile northeast through having logged oil saturation in Bend conglomerate at 6166-83 feet, and drill-stem test is pending. Continental Oil Company's Middleton 1-A, nearest well, is latest completion with potential of 1349 barrels through ½-inch choke from perforations at 6160-86 feet. Second producer for the Spencer pool involves Continental Oil Company's Hogue 1, which pumped 61 barrels initial after nitro shot in broken Strawn at 2714-2809 feet.

Wildcat Failures: Sohio Petroleum Company's Nolen 1, five miles northwest of Wichita Falls, entered Ellenburger at 5426 feet and quit at 5469 feet. In Wilbarger County, The Texas Company's Bankers 1 abandoned in Ellenburger at 5539 feet. Humble Oil & Refining Company's Bennett 1, Childress County, was in Mississippian at 7037 feet when plugged. Bruce Sullivan and Hooper & Byrne's Bailes 1, Throckmorton County, was awaiting orders after logging barren Ellenburger at 5157-5270 feet.

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East Texas

Probable Pool Located Southwest of Winnsboro

Search for Lower Trinity production in Wood County netted discovery of high-gravity oil from the Rodessa in the Manziel area, and probable opening of a pool, centering 2½ miles southwest of Winnsboro. Shell Oil Company's Whatley 1, southeast outpost for Manziel field, recorded first production below the Paluxy for the county in flowing an hourly average of 14 barrels of 43-gravity oil, gas-oil ratio 900/1, on 27-hour test through testing tool after acid treatments. Production is from perforations at 8455-85 feet in the Young, or Basal Rodessa. The flow was later killed to perforate at 8495-8525 feet and re-acidize. This strike possibly paves the way for dual completions in the area, which is currently the most active field in the district because of Paluxy development.

Gulf Oil Corporation's Brewer 1, Ben Lee Survey, Winnsboro prospect, showed a small amount of green oil and gas from perforations in Gloyd, middle Rodessa, at 8310-28 feet, having plugged back from 8719 feet. Additional perforations will follow in a porous zone at 8268-86 feet. Magnolia Petroleum Company's Lindley 1, Yantis wildcat, had apparently reached its Travis Peak objective in drilling hard sand at 8180 feet. Hunt Oil Company's Kennedy 1, between Quitman townsite and Quitman field, entered Glen Rose at 6744 feet and abandoned at 6771 feet.

Smith County: Sun Oil Company's Patterson 1, west outpost for the Sand Flat pool, entered massive anhydrite at 8868 feet with elevation of 509 feet, and was drilling at 8960 feet. It is 9 feet high to the Paluxy discovery, with structural relief attained through cutting faults at 6245 feet and 6778 feet, and is considered a good bet for production in Rodessa and Pettit. Skelly Oil Company's Chisum 1, discovery for the Paluxy, was flowed an average of 7.7 barrels of 26.3-gravity oil hourly on extended gauge from Paluxy perforations at 6972-7025 feet, having junked the lower portion of hole in trying to make a well in Rodessa.

Camp County: Mid-Continent Petroleum Corporation's McGahee 1, 3 miles northwest of Pittsburg, retained its favorable structural position in entering Georgetown at 4605 feet and Mainstreet at 4880 feet, with elevation of 429 feet, and was drilling shale at 5050 feet. Tide Water Associated-Seaboard's Roberts 1, 7 miles east by south of Pittsburg, topped Paluxy at 5805 feet and was drilling shale at 7390 feet.

Franklin County: Tide Water Associated-Seaboard's Elledge 1, west outpost for New Hope field, established the Hill sand of Rodessa section as fourth pay for the area in flowing 28 barrels hourly through ¼-inch choke from perforations at 7433-46 feet. It will also perforate the 7200-foot Bacon oil zone for a dual completion.

Smackover Tests: A. G. Hill et al's Anderson-Magnolia 1, situated on the Calvert faulted structure, Robertson County, was scheduled to be abandoned with 12 stands of drill pipe in hole at 10,288 feet. This wildcat entered the Smackover lime at 9995 feet with elevation of 326 feet, and is the first to reach this horizon along the Luling-Mexia fault trend. No shows were encountered other than minor gas evidence at 7109 feet, near top of Travis Peak. In Franklin County, Humble Oil & Refining Company's Hague 1 was drilling shale and anhydrite at 10,750 feet, while its Anderson 1, fourth Smackover try for the company in Hunt County, entered Paluxy at 3195 feet, and was drilling at 3410 feet.

Wildcats: Brown & Wheeler's Gibson 1, Navarro County, tested salt water after using acid through perforations in Rodessa series at 6556-6718 feet, and will be plugged back to perforate possible gas production in Sub-Clarksville at 3325-33 feet before abandoning. This prospect was carried to Travis Peak at 7370-7528 feet. In Hopkins County, Sonac-Texas Oil & Gas Corporation's Stubbs 1, Thomas Lee Survey, entered Paluxy at 6337 feet with elevation of 503 feet, and no shows were reported in drilling at 6385 feet. Delta Drilling Company et al's Pecan Nursery 1, Henderson County, was drilling at 7070 feet, having topped the Georgetown at 5755 feet and Goodland lime at 6975 feet with elevation of 400 feet.

Van Zandt County: Superior Oil Company's Groves 1, Travis Peak discovery, awaiting pumping unit for several months, will qualify as a commercial well, having pumped 89 barrels of 39.8-gravity oil on latest gauge. Production is from perforations at 8552-70 feet in Travis Peak, topped at 8480 feet.

Cass County: Skelly Oil Company's Baldwin 1, James Taylor survey, tested 3,000,000 cubic feet daily from the Hill zone, top of the Rodessa series at 5850 feet. The well was drilled to 6730 feet and plugged back to the Hill zone. Location is north of the Rodessa field and another test is planned by Skelly on its block.

A 7000-foot test of the Travis Peak in the Kildare area was reported being planned by C. H. Lyons, holder of a block north and west of Kildare. Lyons and Sohio Oil Company drilled a 7000-foot wildcat failure, Taylor 1, Howard Reams survey, last year.

Southwest Texas

New Field Reported in San Patricio by Humble

Humble Oil & Refining Company is opening a new oil field 2 miles southeast of Gregory, San Patricio County, with Green 1 recovering 530 feet of 45-gravity pipe line oil on a drill-stem test. The well is bottomed at 10,010 feet and before the test was made perforations were made at 8120-40 feet, 8060-40 feet and 7967-80 feet and squeezed. Operators have been conditioning hole to complete. Location is in southeast quarter of T. T. Williams survey, one-half mile north of Corpus Christi Bay and 1¼ miles west of the company's Ingleside tank farm.

Wildcatting is showing a pickup in San Patricio County. Southern Minerals Corporation is preparing to drill Miller 1, projected 6700-foot test 4½ miles west of Sinton in the south half of George Morris league. A 6500-foot test is reported planned 5 miles north of Gregory on Myers acreage, south half of lot 2, Section 17.

The Texas Company is preparing to drill a 10,000-foot wildcat in Manuel Gomez grant, Argyle & McAllen 1, 10 miles northwest of Linn on a 35,966-acre lease. It will be a test of sands that produce at Scott & Hopper and Seeligson.

Goliad County: Continental Oil Company is preparing to set casing in Heard 1, 9002-foot dry hole 10 miles north of Goliad, that was abandoned by Sun Oil Company in 1943. Continental leased the tract and has moved derrick and rig in for rework job. It is in Robert Walker survey, 7 miles northeast of Cabeza Creek-Wilcox discovery and 7 miles southeast of Slick-Wilcox field discovery.

Bee County: W. Earl Rowe is running production test on Peter 1, wildcat 5 miles southwest of Beeville, after drilling to 4255 feet and setting 5½-inch casing to 3840 feet. Drill-stem test at 3774-99 feet developed 560 pounds working pressure while another test at 3817-20 feet developed 470 pounds pressure and recovered 90 feet of gas- and oil-cut mud in 7 minutes. The well is in the west corner of a 200-acre lease in the east portion of the Edwin Morehouse survey.

Duval County: American Republic Corporation's Richardson 1 apparently is opening a new oil field 2½ miles west of Birdwell field after recovering 120 feet of oil in 10 minutes on a drill-stem test at 3934-44 feet. The well, in H & G N 18, has been shut down due to loss of returns higher in the hole. Depth is 3944 feet.

Texas Gulf Coast

Liberty County Field Gets Another Extension

General Crude Oil Company has completed another northeast extension to Kirby field, Liberty County, with Lostak 1, M. Duncan survey, flowing 123 barrels daily through ⅛-inch choke. The hole is bottomed at 7260 feet with 5½-inch casing set to 6892 feet, sand topped at 6308 feet. Perforations were made at 6308-26 feet, 6594-6610 feet, 6396-6432 feet, 6798-6810 feet and 6820-44 feet. This field is gradually being extended.

Harris County: The Texas Company has completed Stevenson Fee 55 on the east flank at Humble for 292 barrels daily through 11/64-inch choke. Perforations were made at 4885-4900 feet, tubing pressure 775 pounds. Sand was topped at 4885 feet, 7-inch casing set to 4983 feet. This side of the field was established to Yegua and Cook Mountain production by the same company in 1943.

Drilling: The number of new tests is showing an increase, both wildcats and outposts. Wynn Crosby Drilling Company and Providence Oil Company have proposed an 8000-foot test at Blakely 1, H T & B survey, 5 miles northwest of Clodine in Harris County, 467 feet from the Fort Bend County line. The well will test sands that produce at Clodine.

Hardin County: American Republics Corporation and Houston Oil Company are preparing to drill a 7500-foot wildcat 9 miles east of Village Mills, in H & T C 189.

Superior Oil Company has staked Barker 1, a 7000-foot wildcat on flank of Boling dome, Wharton County, on a 554-acre tract in John Huff survey. The flanks of this dome have been

drilled extensively without prolific production.

Chambers County: Gulf Oil Corporation has completed another outpost to Stowell field, Wasson 1, lot 7, being dual completed. The hole is bottomed at 7792 feet with 5½-inch casing set on bottom. Frio was perforated at 7779-91 feet and flowed 303 barrels daily through 5/32-inch choke. The other sand was perforated at 7610-34 feet and flowed 347 barrels through 3/16-inch choke.

Liberty County: Humble Oil & Refining Company has staked Boyt 1-B, wildcat in Double Gum Bayou area, 10 miles southeast of Devers townsite, on a 1251-acre lease in Section 16, P. D. Lewis survey. It is scheduled to 10,100 feet. William Helis recently opened production in the Cottonwood area, and is completing the third well.

South Louisiana

Pine Prairie Dome Fast Developing as Major

Hassie Hunt has established the Sparta zone productive on northwest flank of Pine Prairie dome in Evangeline Parish, a field that is rapidly developing into a major producing area. Crowell-Spencer 3-C, Section 27-3s-1w, topped Sparta at 9147 feet, was perforated at 9490-9522 feet and 9540-70 feet and flowed 235 barrels daily through 12/64-inch choke, tubing pressure 840 pounds, casing sealed. The hole is bottomed at 10,816 feet with 5½-inch casing set to 10,780 feet. Wilcox was topped at 10,230 feet. The field produces from three sands: Cockfield, Sparta and Wilcox, and some of these sections have different zones that produce.

On the east flank, Gulf Refining Company is testing Wilcox Schlicher-Thomas 2, Section 37-3s-1w. The hole is bottomed at 11,000 feet in shale, 5½-inch cemented at 10,342 feet. Perforations were made at 10,228-53 feet and 10,025-150 feet. On the west flank Gulf is testing Schlicher-Thomas 1-B, Section 35-3s-1w. Perforations were made at 10,344-58 feet and 10,330-39 feet after drilling to 10,555 feet and setting 5½-inch casing to 10,553 ft.

Terrebonne Parish: Superior Oil Company is making a new test on Continental Land & Fur 1, wildcat in Section 30-18s-14e, Bayou Penchant area, that showed gas in perforations at 8118-23 feet. Previously, perforations at 9929-35 feet showed gas and distillate but high gas-oil ratio. Depth is 11,628 feet with casing cemented at 11,277 feet.

Cameron Parish: Magnolia Petroleum has spotted Moore 3 in Gum Cove area, Section 13-12s-12w. The Moore 2 flowed gas-distillate from perforations at 9142-47 feet and potential is being taken on the discovery. Depth is 10,074 feet, 7-inch set to 9231 feet. On one test the well flowed 85 barrels of condensate and 1,266,000 feet of gas through ¼-inch choke.

Beauregard Parish: A gas-distillate field is in making in the Gordon area, Section 25-6s-10w, with Union Oil Company recovering shows on a drill-stem test in perforations at 6780-82 feet, tubing pressure 2200 pounds. Hole is bottomed at 6900 feet, 5½-inch casing set to 6818 feet. The apparent discovery is 8 miles northeast of DeQuincy and 6 miles west of Bear field.

North Louisiana

Operations in Lisbon Area Being Delayed by Rains

Continued rains have delayed operations in the Lisbon area where one well has been completed and closed in, another is testing, and an outpost is being deepened.

Hassie Hunt Trust's Mitcham 1, NW SW SW 3-21n-4w, has been completed as a gas-distillate well and closed in without gauge, from the Bodcaw at 7760-84 feet. It tested Travis Peak at 5180-8 feet and built up 1600 pounds pressure in half an hour on ¼-inch choke.

Big West Drilling Company's Alford Unit B-1, NE SW SW 2-21n-4w, after developing salt water at 7853-60 feet, has squeezed and is retesting at 7852-59 feet. The company's Rainach 1, 16-22n-5w, 4 miles north of production, reported with good showing, was drilling deeper at 8510 feet.

Lincoln Parish: Arkansas Louisiana Gas Company's Liner 1, NE NE SE 31-19n-3w, was coring at 4914 feet.

Tensas Parish: Union Producing Company was attempting to complete an outpost in the Holly Ridge area, Penrod-Jordan 4, SE NW SW 20-21n-10e, with casing set at 8415 feet. In the Lake St. John area, California Company's J. W. Brown 1, C SW NW 46-9n-10e, was coring at 9059 feet.

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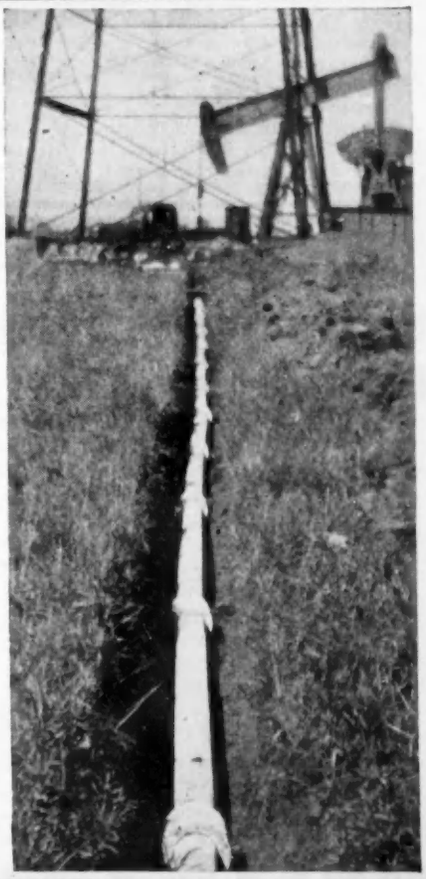

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Brown 1, 4-9n-10e, was testing after setting casing at 9125 feet.

Royal Petroleum Company's Canebrake 1, 1-8n-10e, was halted at 9512 feet by a fishing job and was arranging to whipstock.

H. M. Marr, O. G. Collins and Titanic Oil Company's Baker 1, 26-16n-9e, was drilling below 4800 feet.

Arkansas

Wildcats and Outposts Awaiting Decisive Tests

Outcome of testing operations on several wildcats and other outside tests that may mean extensions were awaited while the Arkansas wildcatting campaign added two more operations last week.

Columbia County: Crescent Drilling Company's Cooley 1, C NW SE 5-17-20, west of the Magnolia field, is a location.

Tide Water Associated Oil Company-Seaboard Oil Company's Pierce 1, 10-18s-20w, continued to test with the last gauge reporting 34 barrels of oil and distillate daily, with 2250 pounds of tubing pressure. The well indicated a discovery with cores of 19 feet of saturated lime. It is 3 miles west of West Atlanta production.

Phillips Petroleum Company was testing Nipper 1, 18-18s-21w, in the Dorcheat-Macedonia field, a dual completion from sands at 6993 and 7560 feet.

Hempstead County: Barnsdall Oil Company abandoned Brunson 1, C NW NW 36-14-25, at 6545 feet.

California

Manpower Situation Hurts Coast Drilling

With drilling at an all-time peak—and still increasing—at a time when manpower shortage has become more acute than ever, a critical situation has developed in California. On March 1, 299 wells were drilling, 55 more were rigged ready to start, 20 unfinished jobs were idle; and the number of locations on the waiting list had reached 255.

Tougher attitude of draft boards on deferments and, to some extent, competition of high wage-level war industries are taking a heavy toll among the younger personnel of field crews. The situation is made even more difficult because a growing number of new projects is made up of deep tests, many of them slow-moving wildcats, that tie up rigs and crews for long periods.

Fresno County: Prospects for the East Raisin City field rose with Universal Consolidated Oil Company's completion of its Section 14 well for 490 barrels of 26-gravity oil, producing from Temblor sands. The discovery well and offsets produce from the Eocene.

Imperial County: Opening the biggest wildcat play of several years in California, Pure Oil Company last week staked location for its first Imperial Valley wildcat in 36-101-9, Winona district. A rush of survey and leasing activities throughout the valley has been in progress for months, lessees including The Texas Company, Standard Oil Company of California, Superior Oil Company, Pacific Western Oil Company, Richfield Oil Corporation, Loren L. Hillman, Inc., and numerous smaller interests. Close to 200,000 acres have been blocked up through an area 36 miles wide and 48 miles long, extending from the northern border of Imperial County to the Mexican border.

Kern County: Showing at a 40-barrel rate on bailing test, Shell Oil Company's test of the East Kern River area, Section 18-29-29, may confirm prospects for a new field discovery indicated earlier in the month by the completion of a Standard Oil Company wildcat a mile further to the southeast. The latter is a producer too small to be rated commercial.

Los Angeles County: Another 10,000-foot test has been started by General Petroleum Corporation further to test the McNally fault area, Norwalk. The new wildcat is three quarters of a mile east of a first try abandoned in December after reaching 10,363 feet without reported showings.

In the heart of a field discovered more than 50 years ago, Merchants Petroleum Company has picked up a promising new pay in the deepening of an old shallow well, Cochrane 7, Section 1-4-20, Sespe Forks pool, Sespe field. Although cutting 40 percent water, a pumping test made 300 barrels of 17-gravity oil. Deepened from old total-depth of 952 feet to 1768 feet, the well opened the new pay between 1700-68 feet.

Michigan

Wildcat Activities at Lowest Ebb in Months

Two wildcats probably will make small producers but neither is commanding special interest due to the probability of opening restricted areas and minor reserves. Wildcat interest as a whole is at its lowest point in months.

Shell Oil Company, which left the state in 1938 but returned its land and geological department a year ago, has taken up several blocks in the "Thumb" area of Eastern Michigan on the basis of seismograph and core work, and may undertake or underwrite several 3000-foot tests this year. The company's play is being watched closely due almost entirely to the seismograph feature of its geological mapping. Seismograph has been used by several majors heretofore but without success.

Allegan County: Muskegon Development Company's Wilcox 1, SW SW NE 20-3n-13w, Monterey Township, a mile south of old Monterey pool, swabbed and flowed 13 to 39 barrels of oil over a 5-day test from Traverse lime at 1777-82 feet.

Midland County: Sun Oil Company is pumping about 2 barrels of oil daily from Berea sand at 2470 feet on Zuchowski 1, S½ SW SE 21-15n-2e, wildcat. Test originally was drilled to 3929 feet and plugged back after failing to show in both the Traverse and Dundee sections.

OPA has advised Michigan crude oil purchasing companies that changes may not be made in present methods of strapping tanks without express OPA authority. OPA also asked companies to submit histories on strapping methods in Michigan and to "express your ideas on proposed changes."

So Congress Is Back!

The Congress of the United States is back after twelve years. It is the best news American people have read in that time. Not even the unconditional surrender of Germany or Japan will match it. Those events are inevitable. Many had abandoned hope for our form of government, and what price victory without democracy? We can now hope the American institution of free private enterprise will survive—that neither socialism nor communism will be embraced by default. How worried the bureaucrats must be. How despondent the spenders. How fearful the dynasty. Thank God for a Barkley! And TRY PELCO FIRST for supplies and equipment. You'll find us considerably perked up.

WE'VE SUPPLIED OIL MEN IN OUR AREA FOR 36 YEARS

PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

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Houston
Berwick
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New Iberia
Lake Charles

United States Well Completions

ARKANSAS

Columbia County — Dorcheat - Macedonia: Lion Oil's Womack 1, c nw nw 15-18-22, pay 6870 ft, 44 bbls, td 9020 ft.

Columbia County — Stephens-Smart: A. A. Cameron et al's Rowe 1, c ne nw 12-15-20, pay 3883 ft, pump 40 bbls 4 hrs, td 4300 ft.

McAlester Fuel Oil Co.'s Williams C-2, 1-15-20, pay 3760 ft, pump 85 bbls, td 4193 ft.

G. H. Vaughn's Taylor 2, nw se nw 12-15-20, pay 3421 ft, pump 117 bbls, td 3420 ft.

ARKANSAS WILDCAT

Hempstead County—Failure: Barnsdall Oil Co.'s Brunson 1, c nw nw 36-14-25, abnd 6545 ft.

CALIFORNIA

Fresno County—Coalinga: Shell's 137-26, nw se sw 26-19-15 pump 191 bbls oil, 64 wtr, perf 2594-2453, 2404-2270 ft, Kreyenhagen 2593 ft, td 2630 ft.

Standard's 82-33A, se ne ne 33-19-15, pump 73 bbls 18.5-gr, 11 wtr, 307 ft perf 2760 ft, Kreyenhagen 2752 ft, "E" 2380 ft, "H" 2515 ft, td 2775 ft.

Tide Water's 12A-8, se ne sw 8-21-15, pump 140 bbls 17.9-gr, 118 ft perf 3348 ft, td 3475 ft.

Fresno County — Helm: Amerada's Wheatville Ranch F-42-8, c se ne 8-17-18, flow no est, perf 8005-25 ft, oil sd 7990 ft, Kreyenhagen 7615 ft, td 8135 ft.

Kern County—Belridge, South: Belridge Oil Co.'s 23-34, ne sw nw 34-28-21, pump no est, 537 ft perf 1030 ft, td 1030 ft.

Belridge Oil Co.'s 23A-34, ne sw nw 34-28-21, pump 35 bbls 14.9-gr, 7 wtr, 452 ft perf 885 ft, td 885 ft.

General Pet. Corp.'s 7-1, ne nw sw 1-29-21, pump 58 bbls oil, 30 wtr, perf 909-1055, 1075-99 ft, td 1217 ft, pb 1100 ft.

Kern County — Buena Vista: General Pet. Corp.'s Balboa 59, sw nw nw 24-31-23, pump 154 bbls 28-gr, 68 ft perf 4050 ft, td 4056 ft.

Standard's 11-11D, sw sw sw 11-32-24, pump 23 bbls oil, 4 wtr, 60 ft perf 2475 ft, td 2868 ft, pb 2475 ft.

Standard's 115-11D, nw sw ne 11-32-24, pump 32 bbls 27.1-gr, 65 ft perf 3030 ft, Scalez 2956 ft, td 3032 ft.

Kern County—Kern Front: Westates Pet. Corp.'s Cauley 24, sw ne se 166-28-27, pump est 15 bbls, 70 ft perf 2604 ft, td 2604 ft.

Kern County — Midway-Sunset: Standard's 38-33B, sw se sw 33-31-23, flow 132 bbls 31.1-gr, 60,000 gas, 18/64-in, 425/0 lbs, 35 ft perf 4228 ft, td 4230 ft.

Texas Co.'s 32-36, sw nw nw 36-31-22, pump 24 bbls oil, 6 wtr, 177 ft perf 962 ft, td 980 ft.

Kern County—Paloma: Western Gulf's Paloma Unit 16-2, sw nw sw 2-32-26, flow 200 bbls 50.4-gr, 223,000 gas, 12/64-in, 800/1275 lbs, perf 10,080-10,160, 10,170-90, 10,200-220, 10,250-80, 10,330-40, 10,350-90 ft, td 10,515 ft.

Kern County—Poso Creek: Pacific Western's Enas Fee 37, nw se sw 21-27-27, pump 38 bbls 15.2-gr, 4 wtr, 9-in 2053 ft, td 2055 ft.

Los Angeles County — Montebello: Standard's Baldwin 114, se nw ne 1-2-12, pump 147 bbls oil, 18 wtr, perf 3295-3357, 3437-3585 ft, td 3590 ft.

Los Angeles County — Wilmington: General Pet. Corp.'s Ford 31, 4078 ft s 1285 ft e c/l Ford and Anaheim, 4-5-13, pump 240 bbls 14.6-gr, 167 ft perf 2569 ft, td 2570 ft.

Long Beach Oil Dev. Co.'s "W" 72,160 ft nely on n/l Seaside Blvd fr e side 23rd Ave th 150 ft sely at r/a, 9-5-13, pump 228 bbls 17.9-gr, perf 3212-3534 ft, td 3539 ft.

Richfield's Pacific Deck 8 (old well deepened), 2143 ft sly on e p/l fr nec th 1184 ft wly at r/a, pump 145 bbls oil, 300 wtr, 116 ft perf 3669 ft, otd 3620 ft, rdrld 3670 ft.

Union Pacific's 233, 4057 ft s 2450 ft w c/l Ford and Anaheim, 4-5-13, pump 147 bbls 15.5-gr, perf 2413-14, 2432-92, 2512-2649, 2707-2878 ft, td 2878 ft.

Zephyr Oil Co.'s Nelson-Barcus 1, 47 ft s 403 ft w c/l "O" and Sanford, 28-4-13 pump no est, 156 ft perf 3500 ft, td 3500 ft.

Orange County—Coyote, East: Severns Drlg. Co.'s C-3, ne sw se 13-3-10, pump 115 bbls 21-gr, 28 mud, 590 ft perf 5027 ft, td 5028 ft.

Orange County—Huntington Beach: Southwest Exp. Co.'s State J-25, 472 ft nwly 125 ft nely c/l 23rd and Ocean, flow 613 bbls 19.9-gr, 20/64-in, 150/825 lbs, 1096 ft perf 3303 ft, td 3305 ft.

Santa Barbara County—Cat Canyon: Union's Bell 21, 3070 ft s on ppty e/l fr nec th 330 ft w at r/a, 35-9-33, flow 450 bbls oil, 61 wtr, 32/64-in, 978 ft perf 5695 ft, td 5700 ft.

Ventura County—Ventura Avenue: Shell's Taylor 172-C-3-J, 1900 ft s 11,620 ft w R.C.L. cor No 11, flow 1201 bbls oil, 132 wtr, 40/64-in, 300/600 lbs, 1121 ft perf 7708 ft, td 7711 ft.

Tide Water's Lloyd 123 (old well deepened), 310 ft s 800 ft e C.L. No. 11, flow 1966 bbls 31.3-gr, 1,734,000 gas, 38/64-in, 400/400 lbs, 847 ft perf 10,385 ft, otd 9065 ft, whipstock set 7570 ft, rdrld 10,390 ft.

CALIFORNIA WILDCATS

Fresno County—Failure: General Pet. Corp.'s Burrel 48-35, se se sw 35-16-18, Huron area, abnd 6613 ft.

Kern County—Failures: Bandini Pet. Corp.'s Signal-Mills 5, nw nw sw 24-28-28, Sharktooth area, barren Vedder 2533 ft, abnd 2790 ft.

P. M. Girard's Signal Tieck 1, se sw nw 13-29-27, Fruitvale area, pumped 110 bbls 18-gr 5 hrs, sanded up, wo ineffectual, abnd 3126 ft.

Richfield's Tejon B-65-7, ne nw se 7-11-18, gray sand, clay in Chanac zone 2017 ft, abnd 2304 ft.

Kern County—Discovery: Dwight G. Vedder's 3-18, se nw se 18-27-28, Mount Poso area, pump 150 bbls 16-gr, 15 wtr, 59 ft perf 2462 ft, Vedder 2415 ft, td 2462 ft.

San Joaquin County — Failure: Richfield's East Stockton 1, sw se ne 5-1-8, Stockton area, abnd 8544 ft.

ILLINOIS

Clay County: W. C. McBride's Cooper 2, sw ne sw 35-4n-7e, abnd 2633 ft.

W. C. McBride's Woolridge 2, ne ne sw 22-5n-5e, pump 50 bbls, Cyp 2144-56 ft, td 2156 ft.

Pure's Edgar Frazier "A" 1, ne ne 25-3n-8e, pump 237 bbls, McCl 2976 ft, perf 2976-78 ft, 2985-89 ft, 3012-14 ft, td 3065 ft.

Edwards County: Superior's J. Danielson 1, se se nw 28-1s-14w, pump 33 bbls, Cyp 2700-15 ft, td 2825 ft.

Texas Co.'s R. Tait "B" 1, nw nw nw 31-2s-11e, pump 82 bbls, perf 2376-2410 ft, td 2412 ft.

Tarleton Oil's Reichart 5, sw sw sw 27-1n-10w, pump 65 bbls, Trenton 706 ft, td 762 ft.

Hamilton County: Gulf's E. York 2, ne se ne 27-4s-7e, pump 12 bbls, 3304-10 ft, td 3310 ft.

Jefferson County: Bell Bros.'s Ruth Parker Cons. 1, e nw ne 24-1s-3e, pump 90 bbls, McCl 2773-79 ft, td 2876 ft.

Lawrence County: J. S. Weaver's H. P. Seed Est. 1, ne ne sw 29-3n-12w, abnd 2179 ft.

Wabash County: Magnolia's Clay Moeller 1, ne sw ne 5-1s-12w, pump 20 bbls, Cyp 1985-2031 ft, td 2060 ft.

C. R. Craft's Kitchene 2, ne nw sw 8-1s-12w, pump 10 bbls, Cyp 2024-40 ft, td 2040 ft.

Texas Co.'s Stein 8, se ne nw 8-1s-12w, pump 95 bbls, 1710-24 ft, Cyp 2019-35 ft, td 2035 ft.

Shell's C. J. Woods et al 1, sw sw sw 20-1n-12w, pump 50 bbls, Biehl 1542-65 ft, td 2112 ft.

C. E. Skiles' D. Schmitt 1, ne nw se 20-1n-12w, pump 345 bbls, Rosi 2344-51 ft, td 2351 ft.

Wayne County: First Nat'l Pet. Trust's Ellis Heirs 2, se sw ne 18-1s-5e, pump 40 bbls, AV 2923-48 ft, td 2948 ft.

Pure's Lewis Barnard "A" 1, ne sw ne 7-1s-6e, abnd 3225 ft.

Deep Rock's Harper 2, sw nw 33-1s-7e, flow 380 bbls, McCl 3276-87 ft, td 3287 ft.

Pure's Harvey Taylor 2, ne nw 33-1s-7e, flow 201 bbls, McCl 3292-3303 ft, td 3303 ft.

Pure's B. F. Thomas 1, sw ne 11-1s-8e, flow 678 bbls, McCl 3091-3100 ft, td 3110 ft.

Magnolia's P. A. Lane 1, sw sw nw 18-2s-5e, flow 708 bbls, McCl 3028-51 ft, td 3051 ft.

New Penn Dev. Corp.'s Fee 3, w ne sw 28-2s-9e, flow 211 bbls, sd 3268-76 ft, td 3340 ft.

Cities Service's Vaught 3, nw se nw 33-2s-9e, flow 250 bbls, Rosi 3260-66 ft, td 3385 ft.

Shulman Bros.' A. J. Poorman 2, se nw sw 18-3s-8e, pump 66 bbls, AV 3239-58 ft, td 3260 ft.

Pure's C. E. Webster 2, sw ne se 15-1n-8e, pump 197 bbls, sd 3054-58 ft, td 3135 ft.

Pure's L. P. Grey "A" 2, se nw se 34-2n-7e, flow 372 bbls, AV 2956-73 ft, td 2980 ft.

Pure's H. Michels 3, nw ne nw 36-2n-7e, pump 74 bbls, sd 2939-48 ft, td 2960 ft.

White County: Sinclair Wyoming's Ackerman 2, ne nw sw 13-6s-10e, abnd 3014 ft.

Great Lakes Carbon's D. G. & W. L. Miller 3, sw nw ne 28-6s-10e, pump 130 bbls, sd 2259-79 ft, td 2282 ft.

ILLINOIS WILDCATS

Clark County—Failure: L. D. King's D. L. Downey 1, ne ne sw 4-9n-13w, abnd 477 ft.

Edwards County—Failure: Geo. C. Schoonmaker et al's J. T. Cowling 1, sw sw se 16-2s-14w, abnd 3151 ft.

Fayette County—Failure: F. E. Webb et al's Mueller 1, se nw se 2-4n-1w, abnd 1690 ft.

Marion County — Failure: Texas Co.'s C. Hiestand 1, se se se 16-3n-3e, abnd 2590 ft.

Wayne County — Discovery: Robinson & Puckett's Felix 1, se ne se 12-3s-7e, flow 129 bbls, AV 3240-58 ft, td 3258 ft.

White County—Discovery: Great Lakes Carbon's Tully 1, se nw se 21-6s-10e, pump 80 bbls, Cyp 2623-36 ft, td 2646 ft.

INDIANA

Crawford County: J. T. Peek's Price & Downen 1, ne ne ne 25-6s-13w, pump 55 bbls, Mans 1128-53 ft, td 1153 ft.

Gibson County: T. C. Knight's Woods 1, nw nw ne 30-2s-11w, pump 38 bbls, Cyp 1980-87 ft, td 1987 ft.

INDIANA WILDCAT

Lake County—Failure: Bonded Oil's Williams 1, c nw sw 33-32n-9w, abnd 1800 ft.

Wells Completed in the United States in Week Ended March 4, 1944

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Arkansas	....	....	....	....	....	....	1	....	1	2	2	7	27	32
California	24	....	....	....	24	2	1	....	5	6	32	46	316	199
Colorado	....	....	....	....	....	....	....	....	....	....	....	....	5	5
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Illinois	24	....	....	4	28	....	2	....	4	6	34	50	278	328
Indiana	2	....	....	....	2	....	....	....	1	1	3	14	67	49
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Kansas	15	....	....	2	17	....	2	....	7	9	26	39	336	245
Keatucky	4	1	....	1	6	....	1	....	....	1	7	13	87	42
Louisiana	10	....	....	1	11	....	....	....	1	1	12	17	109	95
North Louisiana	....	....	....	....	....	....	....	....	1	1	1	7	31	40
South Louisiana	10	....	....	1	11	....	....	....	....	....	11	10	78	55
Michigan	4	....	....	5	9	....	....	....	....	....	9	12	109	73
Mississippi	....	....	....	....	....	....	....	....	....	....	....	....	3	11
Missouri	....	1	....	....	1	....	1	....	1	1	2	....	4	2
Montana	2	....	....	2	4	....	....	....	....	....	4	3	47	38
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	7	13
New Mexico	8	....	....	2	10	1	....	....	2	2	13	7	76	45
New York	15	....	10	....	25	....	....	....	....	....	25	25	197	206
Ohio	3	1	....	1	5	....	....	....	....	....	5	5	....	157
Oklahoma	16	5	2	6	29	3	2	....	3	5	37	32	281	231
Pennsylvania	28	3	15	2	48	....	....	....	....	....	48	47	395	430
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Texas	49	....	....	14	63	1	11	3	10	24	88	94	906	657
E.Tex.Bor. Co.'s	....	....	....	....	....	....	....	....	....	....	....	....	4	3
E. Texas Field	....	....	....	....	....	....	....	....	....	....	....	....	1	2
Rest of E. Texas	1	....	....	....	1	....	1	....	1	2	3	7	48	38
North Texas	10	....	....	6	16	....	1	....	2	3	19	16	194	153
W. Central Tex.	....	....	....	1	1	....	1	....	....	1	2	8	65	55
West Texas	29	....	....	1	30	....	1	....	2	3	33	23	247	144
Tex. Panhandle	....	....	....	2	2	....	....	....	....	....	2	3	30	50
G. Coast, Upper	2	....	....	....	2	....	....	....	....	....	2	14	81	42
G. Coast, Lower	5	....	....	1	6	....	5	2	2	9	15	19	159	91
Southwest Texas	2	....	....	2	4	1	2	1	3	6	11	2	63	65
S. Central Texas	....	....	....	1	1	....	....	....	....	....	1	2	14	14
West Virginia	....	19	....	4	23	....	....	....	....	....	23	16	181	110
Wyoming	....	....	....	....	....	....	....	....	1	1	1	1	24	28
Total U.S.	204	30	27	44	305	7	20	3	36	59	341	428	3,456	3,000

* Includes distillate wells. † Includes salt water disposal wells.

KANSAS

Barton County—Kraft-Prusa: Gulf's Martha Case 3, ne sw nw 26-16s-12w, KC 3075 ft, 2000 gals acid, 6 bbls oil, 9 bbls wtr, td 3311, pb 3153 ft.

Barton County—W. Ainsworth: Continental's F. J. Schrieber 2, nw ne se 32-16s-13w, Arb 3345 ft, 323 bbls oil, 3364 ft.

Barton County—Ames: Edouard Jonas' Doll 1, se ne nw 27-18s-11w, Simpson 3319 ft, 240 bbls oil, td 3335 ft.

Cowley County—E. Baird: Summit Drlg.'s R. W. Brofft 1, c e½ ne nw 16-34s-3e, B'ville 3285 ft, abnd 3287 ft.

Ellis County—Bemis: (semi-wildcat) Westgate-Greenland's Windholtz 1, nw ne sw 3-12s-17w, Arb 3613 ft, 3000 gals acid, 15 bbls oil, 45 bbls wtr, 3633 ft.

Ellsworth County—Wilkins: Weber Dental Mfg.'s Peterman 1, c sw ne 11-17s-10w, Arb 3287 ft, 4000 gals acid, 327 bbls oil, 37 bbls wtr, 3296 ft.

Greenwood County—Beaumont: K. T. Weidemann's E. C. Edgar "A," sw sw ne 2-28s-8e, Miss 2467 ft, 2000 gals acid, 25 bbls oil, 2488½ ft.

McPherson County—Paden: Phillips' Winning 3, sw sw sw 10-18s-1w, Miss 2672 ft, 1000 gals acid, 456 bbls oil, td 2629 ft.

Phillips' Winning 4, sw nw sw 10-18s-1w, Miss 2675 ft, 1000 gals acid, 403 bbls oil, 84 bbls wtr, td 2704 ft.

Pratt County—Stark: Margay's Haley 2, ne nw ne 13-26s-12w, Viola 4148 ft, 500 gals acid, 134 bbls oil, 4153 ft.

Pratt County—Carmi: Magnolia's C. J. Binger 7, sw ne se 31-26n-12w, Arb 4301 ft, 500 gals acid, 89 bbls oil, 4200 ft.

Pratt County—Chitwood: Lion's Chitwood 4, ne nw nw 23-28s-12w, Arb 4452-57 ft, 7000 gals acid, 30 bbls oil hr for 4 hrs, 4460 ft.

Rice County—Raymond: Hyde & Stormfeldt's Rick 3, c s½ ne se 17-20s-10w, White Lansing 3045 ft, 6000 gals acid, 703 bbls, 3132 ft.

Russell County—Fairport: Summitt Oil's Hodge 1, c e½ sw ne 32-11s-15w, Lansing 2802 ft, pay 3174-81 ft, 3000 gals acid, 11½ bbls, 3216 ft.

Russell County—W. Greenvale: Skelly's C. Pekarek 2, c s½ nw se 31-14s-12w, Arb 3156 ft, 250 gals acid, 169 bbls oil, 1% wtr, 3161 ft.

Russell County—Williamson: Cities Service's Boxberger "C" 1, ne se sw 4-14s-14w, Granite wash 3350 ft, 3355 ft.

Russell County—Trapp: Pryor & Lockhart's Boxberger "D" 1, c s½ nw sw 11-15s-14w, Arb 3382 ft, 3415 ft.

Saline County—Hunter: Deep Rock's Comm 3, ne sw sw 20-16s-1w, Miss 2649 ft, 1000 gals acid, 256 bbls oil, 1110 bbls wtr, 2636 ft.

Stafford County—S. Snider: Vickers' C. Kasselman 1, c e½ ne sw 17-21s-11w, Arb 3656 ft, abnd 3567 ft.

Woodson County—Weide: Ward McGinnis' Weide 9, sw ne ne 31-23s-15e, Miss 1550 ft, td 1583 ft.

KANSAS WILDCATS

Barber County—Failure: Great Lakes Carbon's Davenport 1, c se se 34-31s-11w, abnd 4445 ft.

Barton County—Discovery: Deep Rock's Skinner "B" 1, c w nw se 29-31s-14w, flow and pump 278 bbls, 9000 gals acid 4624-4640 ft.

Barton County—Discovery: F. C. Koch's Schauf "B" 1, c n sw se 2-16s-12w, test 10 bbls per hr; perf 3088-3106 ft, 3327-3330 td, 3050 gals acid.

Pratt County—Failure: Bridgeport's Wittman 1, sw c se 34-27s-14w, abnd 4707 ft.

Reno County—Failure: British American's Breitenback 1, ne c 3-26s-5w, Viola 3977 ft, Simp 3993 ft, Arb 4091 ft, abnd 4143 ft.

Sedgwick County—Failure: Beech Aircraft's Streiff 1, ne se nw 3-28s-2e, Miss 3010 ft, Kinderhook 3252 ft, Simp 3308 ft, abnd 3340 ft.

Sheridan County—Failure: Continental's A. C. Croffoot 1, sw c se 35-7s-26w, Lans 3744 ft, abnd 3831 ft.

Stafford County—Failure: Isern Bros. Lanterman 1, nw ne se 11-21s-12w, Lans 3112 ft, Cong 3471 ft, abnd 3630 ft.

Trego County—Failure: Lion & Auto Ordnance's Walsh 1, ne c sw 5-11s-25w, anhydrite 2036 ft, Lans 3680 ft, Miss chat 4300 ft, Miss dol 4330 ft, Viola 4463 ft, Arb 4513 ft, abnd 4621 ft.

KENTUCKY

Hancock County: S. Zanetis' Brown 6, 4-O-33, abnd 753 ft.

Cumberland Pet.'s Brooks (32) 31, 19-O-33, 30,000 gas, td 380 ft.

Ohio County: Ellis Massey's Martin 5, 3-M-31, abnd 786 ft.

Union County: Ashland Basin & Evans' Johnson 2, 13-O-18, pump 140 bbls, McCl 2829-37 ft, td 2840 ft.

Sun's Nancy Biggs 1, 11-P-19, pump 100 bbls, Cyp 2175-86 ft, td 2186 ft.

Hiawatha's City of Uniontown 9, 20-P-19, pump 240 bbls, Cyp 2160-79 ft, td 2179 ft.

E. J. Ruwalt's Conner Comm 1-A, 20-P-19, pump 160 bbls, Cyp 2172-2219 ft, td 2219 ft.

KENTUCKY WILDCAT

Henderson County—Discovery: W. F. Lacy's Woods 6, 16-Q-22, pump 80 bbls, Walts 1785-97 ft, td 1797 ft.

NORTH LOUISIANA WILDCAT

De Soto Parish—Failure: H. C. McCalman's Williams 1, sw nw 6-10n-12w, abnd 1791 ft.

SOUTH LOUISIANA

Beauregard Parish—Bear: Shell's Marler 1-A, 1035 ft e 680 ft n of sw cor 22-6s-9w, 5½-in 6540 ft, perf 6518-22 ft, 97 bbls oil, 65 bbls sw, ½-in, td 6540 ft.

Calcasieu Parish—Vinton: Union Oil Co.'s Gray 2-W, 990 ft s 1651 ft e of nw cor 34-10s-12w, 5½-in 5494 ft, perf 5554-68 ft, 118 bbls, ¼-in, td 5636 ft.

Union Oil Co.'s Gray 3-W, 900 ft s 2311 ft e of nw cor 34-10s-12w, 5½-in 5602 ft, 161 bbls, 9/64-in, td 5865 ft.

Evangeline Parish—Reddell: Continental-Humble's Pardee Lumber 4, 2970 ft s 990 ft w of ne cor 18-4s-1w, abnd 12,082 ft.

Evangeline Parish—Pine Prairie: Hassie Hunt's Crowell-Spencer 3-C, nw flank, 340 ft n 337 ft w of se cor sw¼ 27-3s-1w, 5½-in

The OIL WEEKLY'S TRADING POST

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■ Want to Buy good used Bucyrus Erie Spudder. Address J. S. Patton, 2205 Bath Avenue, Ashland, Kentucky.

■ WANTED: One or two Butane tanks of about 1500 gals., new or used, for drilling rigs. Address M. L. Massingill, 433 Devine Road, San Antonio 1, Texas.

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WANTED

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Trading Post Section, THE OIL WEEKLY
P. O. Box 2608 Houston 1, Texas

10,780 ft, perf 9490-9522 ft, 9540-70 ft, 235 bbls, 12/64-in, td 10,816 ft.

LaFourche Parish—Delta Farms: California Co.'s Vall 1, begin se cor sec 36 go w 3262 ft, th n 1° 00 mins w 652 ft to lcn 36-16s-22e, 7-in 9067 ft, perf 9032-55 ft, 260 bbls, 9/64-in, td 9067 ft.

Plaquemines Parish—Grand Bay: Gulf's Grand Prairie Levee 22-A, 780 ft e on nl sec 8 fr nw cor, same being on line between secs 1 & 5-20s-19e, 5½-in 8856 ft, perf 7384-96 ft, 272 bbls, 9/64-in, td 9007 ft.

Plaquemines Parish—Potash: Humble's State-Mississippi 2, fr se cor sec 30, go nwly on sel 1987 ft, th nwly at ra 151 ft ln 30-18s-15e, 7-in 9514 ft, perf 9290-9310 ft, 11 bbls, hr, ¼-in, td 9543 ft.

Plaquemines Parish—Venice: Tide Water's Buras Levee 26, 1362 ft s 1065 ft e of nw cor 34-21s-30e, 5½-in 10,990 ft, perf 10,024-40 ft, 270 bbls, ¼-in, td 10,991 ft.

St. James Parish—St. James: Humble's Zeringue & Sons 1-A, start n cor sec 7, go swly on nwl 4166 ft at ra 879 ft to lcn 43-13s-16e, 7-in 10,850 ft, perf 10,769-80 ft, 166 bbls oil, 4,400,000 gas, ¼-in, td 11,335 ft.

Vermilion Parish—East Whitelake: Union Oil Co.'s Vermilion Parish School Board 8-A, s 00° 34 mins w 4620 ft, th w 4634 ft fr ne cor 16-15s-1e, 5½-in 10,553 ft, perf 10,508-513 ft, 23 bbls cond, 620,000 gas, ⅛-in, td 10,553 ft.

MICHIGAN

Bay County—Kawkawlin: Gulf's Marston 4, s½ se se 1-14n-4e, Dundee, flow 46 bbls, td 2900 ft.

Newaygo County—Goodwell: Pure's Alger 1, e½ sw nw 8-14n-11w, Traverse, flow 253 bbls 19 hrs, td 2831 ft.

Pure's State A-1, e½ se nw 9-14n-11w, Traverse, pump 9 bbls, td 2896 ft.

Van Buren County—Bangor: Clapsaddle Drilling Co.'s Sheldon 2, se sw se 20-2s-16w, Traverse, pump 21 bbls, td 1006 ft.

MICHIGAN WILDCATS

Clinton County—Failure: C. W. Teater's Walker 1, w½ sw nw 8-7n-1w, Dundee 2797 ft, abnd 2950 ft.

Isabella County—Failure: Rex O&G Co.'s Nurnberger 1, nw ne ne 25-16n-3w, Dundee 3759 ft, abnd 3849 ft.

Kent County—Failure: S. L. McCall's Alles 1, sw nw sw 12-8n-11w, Traverse 2307 ft, abnd 2345 ft.

Mecosta County—Failure: Gordon & Chapman's Soule 1, sw sw ne 12-15n-8w, abnd 1427 ft.

Wayne County—Failure: W. H. Colvin's Theison 1, ne se se 16-4s-9e, St. Peter sd 3440 ft, abnd 4050 ft.

MONTANA

Glacier County—Cut Bank: Glacier Prod. Co.'s Bonnet 12, nw se se 33-33n-6w, lost hole, td 2580 ft.

Trigood Oil Co.'s Security State Bank 1, se ne ne 1-31n-6w, swab 20 bbls Cut Bank sand 3048-90 ft, 7-in 3070 ft, td 3105 ft.

Pondera County—Midway: Hagenab & Pond's Rispin 2, sw ne nw 20-38n-1w, lost hole, td 1450 ft.

Toole County—Kevin-Sunburst: Leone Letts' Kal-Kevin 12, sw nw nw 19-35n-1w, 500 gals acid, Ellis 1510 ft, pump 56 bbls oil, 35 bbls wtr, Ellis-Madison 1528-31 ft.

NEW MEXICO

Eddy County: Danciger Oil's Freiss 1, c sw ne 30-17s-31e, flow 47 bbls, 2-in, shot 160 qts 1929-2039 ft, td 2057 ft.

Dickenson & Yates' Brooks 1, c ne ne 13-18s-29e, flow 15 bbls, 2-in, shot 390 qts 2690-2775 ft.

Grayburg Oil Co.'s Burch 9-B, c nw nw 30-17s-30e, flow 504 bbls, 2-in, 3000 gals acid 3105-3240 ft.

Grayburg Oil Co.'s Keeley 5-B, c nw nw 25-17s-29e, flow 250 bbls, 2-in, 2858-2968 ft.

Penn & Surgical's Ballard 2-B, c ne nw 8-18s-29e, flow 32 bbls, 2-in, shot 270 qts 2465-2604 ft.

Wilmer Oil Co.'s Ginsberg 4-A, c se sw 8-18s-31e, abnd 4027 ft.

Wilmer Oil Co.'s Ginsberg 5-A, c nw se 8-18s-31e, abnd 3152 ft.

Lea County—Maljamar: Boller & Rutledge's Iles 1, c sw sw 9-17s-32e, flow 30 bbls, 2-in, shot 90 qts 3894-3966 ft.

Phillips' Wyatt 2, c ne se 30-17s-33e, flow 135 bbls, 14/64-in, shot 220 qts 4130-4252 ft, td 4276 ft.

Lea County—Rhodes: Texas-Amerada-Columbian's Rhodes 3-A, c sw sw 22-26s-37e, flow 408 bbls, 2-in, shot 170 qts 3205-3300 ft.

NEW MEXICO WELL DEEPENED

Lea County—Eaves: Stanolind's Farnsworth 3-B, c w½ ne sw 7-26s-37e, otd 2995 ft, flow 35 bbls oil, 45 bbls wtr, gas lift, 4000 gals acid 2980-3025 ft.

NEW MEXICO WILDCATS

Lea County—Failure: N. G. Penrose's State 1, c ne sw 11-15s-35e, elev 3983 ft, anhydrite 1950 ft, salt 2060-3040 ft, white lime 4600 ft, abnd 5553 ft.

San Juan County—Failure: West & Steele's Brimball 1, c s½ sw se 3-29n-15w, abnd 1102 ft.

OKLAHOMA

Carter County—Ardmore: Samedan's Tomlinson 2, c sw nw sw 13-5s-1e, sd 5120-44 ft, sd 5155-67 ft, swab 6 to 8 bbls oil, td 5462 ft, pb 5191 ft.

Coal County—Centrahoma: Pure's D. A. Edwards 1, se ne nw 28-2n-9e, sd 1385-1442 ft, abnd 2020 ft.

Creek County—Cushing: Sand Springs Home's Johnson 2, se nw nw 14-17n-8e, B'ville 2608 ft, 1,700,000 gas, 2717 ft.

Sinclair Prairie's Haggard 7, c wl ne ne 33-18n-7e, B'ville 2592 ft, shot 80 qts, pump 15 bbls oil, td 2694 ft.

Creek County—Glenn: Gulf's L. Pitman 31, (input well) ne se sw 7-17n-12e, Glen 1449-1531 ft, td 1531 ft, pb 1492 ft.

Creek County: Sinclair Prairie's L. L. Berryhill 56, se ne se 16-18n-12e, Glenn 1404-1580 ft, shot 140 qts, pump 6 bbls oil, td 1583 ft.

Creek County: Gulf's J. P. Rhodes 28, (input well) ne nw nw 20-17n-12e, Glenn 1431-1524 ft, td 1528 ft.

Creek County—Manford: W. H. Elson et al's Griessel 1A, ne se ne 36-19n-8e, Wilcox 3089 ft, abnd 3101 ft.

Garvin County—Pauls Valley: Pure's Teter 16, nw nw ne 31-4n-1e, Penn 3939-40 ft, 3965-70 ft, 3985-90 ft, flow 270.24 bbls oil, 320,000 gas, td 4043 ft.

Pure's Teter 17, nw ne se 36-4n-1w, Bromide 3988 ft, DST 3934-4002 ft, opn 1 hr, rec 60 ft oil, td 4100 ft.

Greer County—Unnamed: R. C. Moss et al's Moss 1, sw sw se 30-6n-21w, Granite wash 610 ft, 1,625,000 gas, td 666 ft.

Lincoln County—Unnamed: Northern Ordnance's Long (Comm) 1, c nw sw 12-13n-6e, Hunton 4086 ft, 5,800,000 gas, td 4093 ft.

Logan County—Crescent: Davon et al's J. F. Good 1, c se se 22-17n-4w, Dayton 4975-5010, shot 48 qts, flow 100 bbls oil, 2 bbls wtr, td 5012 ft.

Marshall County—Cumberland: Pure's Metz 105, se nw nw 28-5s-7e, 2nd sand 6374 ft, 504 bbls oil, 272,000 gas, 1-in, 6304 ft.

Okfuskee County—Weleetka: (semi-wildcat) Wells et al's Leonard 1, c sw ne 23-10n-11e, Gilcrease 2607-20 ft, 2,300,000 gas, td 2620 ft.

Okfuskee County—Okemah: Grimes & Neal's Wind 10, sw se nw, 35-11n-9e, Senora 1480 ft, abnd 1524 ft.

Oklahoma County—W. Edmond: Sohio's Genzer 2, c se nw 5-13n-4w, Hunton 6830 ft, 314 bbls 15 hrs, 7105 ft.

Oklahoma County: Peppers Ref.'s Meeker 1, c se nw 31-14n-4w, Hunton 6915 ft, 300 bbls, ¼-in, 6965 ft.

Peppers Ref.'s C. Young 1, c nw se 32-14n-4w, Hunton 6780 ft, 1000 gals acid, 300 bbls, ¼-in, 6907 ft.

Okmulgee County—Schulter: Eagle Picher's Bastable 1, sw sw sw 31-12n-13e, Booch 1755-2015, 200,000 gas, td 2834 ft, pb 1910 ft.

Osage County—Avant: Sinclair Prairie's 76, ne se ne 19-23n-12e, B'ville 1607 ft, shot 80 qts, 20 bbls, td 1740 ft, pb 1736 ft.

Osage County—Barnsdall: J. Harrison's Pah-to-kah 1A, nw se nw 8-24n-10e, Miss 2151 ft, abnd 2181 ft.

Payne County—S. Stillwater: T. N. Perry's Gray 1, c nw ne 35-19n-2e, Skinner 1407 ft, abnd 4119 ft.

Payne County—Garr Area: (semi-wildcat) Sun's Morgan 1, nw ne sw 10-19n-5e, 2nd Wilcox 3579 ft, shot 120 qts, 30 bbls oil, 20 bbls wtr, ½-in, td 3678 ft, pb 3626 ft.

Seminole County—E. Wewoka: Jordan's Chamblee 1A, ne nw se 15-8n-8e, Hunton 3975 ft, 2000 gals acid, flow 61 bbls, td 4290 ft, pb 4130 ft.

Stephens County—Velma: L. Winkler's J. Walker 1, sw sw ne 10-2e-5w, abnd 1100 ft.

Stephens County—W. Loco: Fair & Bright's Clark 2, sw sw se 36-2s-6w, pay 1195-1204 ft, 1204 ft, 8 bbls, td 1223 ft.

British American's Lena Watson 2, se se sw 6-3s-5w, lime 1263-70 ft, 1000 gals acid, 11 bbls, td 1530 ft, pb 1270 ft.

Stephens County: Brown & Lentz's Lowery 6, ne ne sw 8-3s-5w, sd 985-97 ft, pump 35 bbls, td 1053 ft.

OKLAHOMA WELLS DEEPENED

Carter County: Ideal's Scroggins 3, ne se se 32-3s-3w, otd 1148 ft, sd 1150-61 ft, 8 bbls, td 1169 ft, pb 1162 ft.

Ideal's Scroggins 5, ne se se 32-3s-3w, otd 1123 ft, sd 1158-71, 10 bbls, td 1172 ft, pb 1171 ft.

Stephens County—W. Loco: British American's Watson 1, ne se sw 6-3s-5w, otd 1185 ft, lime 1217-45 ft, 1320-60 ft, 3100 gals acid, 82 bbls fluid, 35% salty wtr, td 1450 ft, pb 1360 ft.

OKLAHOMA WILDCATS

Atoka County—Failure: Amerada & Stanolind's Leonard 1, se sw se 25-3s-9e, abnd 2346 ft.

Hughes County—Failure: Burk-Greis' Wilbanks 1, nw ne nw 2-5n-9e, abnd 4631 ft.

Logan County—Discovery: Gulf's Prichard 1, c nw nw 22-17n-3w, flow 81 bbls, perf 4698-4717, 4692-4717 ft, td 6330 ft, pb 4767 ft.

Oklahoma County—Discovery: Fox et al's Peterson 1, ne sw 19-14n-4w, flow 121 bbls 4 hrs, 1-in, pinched bk 300 bbls, perf 6894-6934 ft, td 7010 ft.

Osage County—Failure: Champlin Oil's Osage 1, sw sw ne 1-23n-3e, Wilcox 4122 ft, abnd 4150 ft.

WEST TEXAS

Andrews County—Mascho: Belfort Oil Co.'s University-Cities Service 1-G, c se sw sec 22, blk 10, pump 36 bbls oil, 67 bbls wtr, shot 540 qts 4350-4576 ft.

Lion Oil's University 3, 522 ft snl 660 ft wel sec 2, blk 10, pump 69 bbls, shot 280 qts 4475-4603 ft.

N. G. Penrose's University-Humble 4-A, 614 ft nsl 660 ft ewl se sec 3, blk 10, flow 199 bbls, ½-in, shot 320 qts 4440-4598 ft.

N. G. Penrose's University-Amerada 2-D, 677 ft snl 678 ft ewl sec 10, blk 10, flow 193 bbls, 24/64-in, shot 470 qts 4385-4611 ft.

Andrews County—Embar-Permian: Phillips' University-Andrews 46, 664 ft nsl 678 ft wel sec 31, blk 10, flow 116 bbls, ½-in, 5000 gals acid, Clear Fork 6200-6250 ft.

Cochran County—Slaughter: Bay Pet. Corp.'s Mallet-Humble 7, 580 ft out se cor lab 12, lge 53, Scurry CSL, flow 174 bbls, 2-in, 11,750 gals acid 5015-52 ft.

Continental's Dean 20-58, 651 ft nsl 2008 ft ewl lge 58, Martin CSL, flow 800 bbls, 12,000 gals acid 4978-5014 ft.

E. E. Fogelson et al's Duggan 5, 510 ft out sw cor lab 14, lge 55, Oldham CSL, flow 843 bbls, 12,000 gals acid 5010-60 ft.

Honolulu & Saltmount's Blake 4-A, 510 ft out nw cor lab 15, lge 54, Oldham CSL, flow 769 bbls, 2-in, 9000 gals acid 5065-88 ft.

Magnolia's Mallet 23-J, 1451 ft snl 1337 ft ewl lab 1, lge 50, Scurry CSL, flow 941 bbls, 10,500 gals acid, td 5034 ft.

Cochran County—N. W. Slaughter: Sunray Oil Co.'s Wright-O'Neal 1, 660 ft out sw cor lab 1, lge 59, Martin CSL, flow 375 bbls, 2-in, 4000 gals acid 4930-42 ft.

Crockett County—World-Powell: Armer & Armer's Powell 14-A, 467 ft out se cor lse, sec 2, blk BB-2, E. L. Ry-N. A. Miller sur, pump 84 bbls, 1000 gals acid 2596-2609 ft.

Armer & Armer's Powell 15-A, 1400 ft nsl 2380 ft wel sec 2, pump 74 bbls, 1000 gals acid 2614-26 ft.

Ector County—Goldsmith: Gulf's Goldsmith 392, 440 ft nsl 2167 ft ewl T&P 18, blk 44, T-1-S, flow 1821 bbls, 2-in, 4000 gals acid 4183-4283 ft.

Gaines County—Cedar Lake: Samedan Oil Corp.'s Jones 1, c se sw D&W Ry. 10, blk H, elev 3108 ft, m nw main field, pump 162 bbls, shot 120 qts 4780-4808 ft.

Stanolind's Rayner 8, c se se PSL 3, blk C-30, swab 293 bbls, shot 300 qts 4670-4770 ft, td 4810 ft.

Gaines County—Wasson: Continental's Wasson 8-52, 2088 ft nsl 766 ft ewl PSL 52, blk AX, flow 149 bbls, 15/64-in, 12,000 gals acid 4928-54 ft.

Carl B. King-C. U. Bay's Brand 1, ne se ne PSL 56, blk AX, flow 177 bbls, 24/64-in, 7000 gals acid perf 4930-5017 ft, td 5103 ft.

Hockley County—Slaughter: Honolulu's Slaughter 41-B, 510 ft out se cor lab 78, lge 37, Zavalla CSL, flow 1489 bbls, 2½-in, 10,000 gals acid 4940-5020 ft.

Honolulu's Slaughter 49-B, 1450 ft nsl 1330 ft ewl lab 22, lge 37, Zavalla CSL, flow 1472 bbls, 2½-in, 11,000 gals acid 4925-5020 ft.

Magnolia's Mallet 20-E, 1451 ft snl 1340 ft ewl lab 12, lge 49, Scurry CSL, flow 1115 bbls, 10,500 gals acid 4975-5030 ft.

Howard County: Continental's Clay 6-E, nw nw se W&NW 138, blk 29, pump 492 bbls, 2000 gals acid 2463-2530 ft.

Howard County—Iatan-East Howard: M. & M. Production Co.'s Davis-Hall 2, 1713 ft nsl 1986 ft wel T&P 44, blk 30, T-1-N, pump 121 bbls oil, 121 bbls wtr, lime 2565-2613 ft.

Mitchell County—Westbrook: Coltex Ref. Co.'s Pettitfils 1-B, 1656 ft snl 1709 ft wel T&P 14, blk 28, T-1-N, pump 89 bbls, shot 920 qts 2986-3110 ft.

Coltex Ref. Co.'s Standard of Texas 3, 2350 ft nsl 1670 ft wel T&P 10, blk 28-T-1-N, pump 81 bbls, shot 1000 qts 3020-3120 ft.

Pecos County—Toborg: Stanolind's Toborg 12, 1212 ft nsl 480 ft wel sec 539, Arnold-Barrett sur, abnd 500 ft.

Ward County—Gulf-O'Brien: Gulf's O'Brien 174, 1728 ft snl 2310 ft ewl G&MMB&A 9, blk 0, flow 1530 bbls, shot 382 qts 2549-2700 ft, td 2716 ft.

Winkler County—Weiner: Continental's Brown-Altman 2, se ne ne PSL 25, blk B-5, flow 255 bbls, 7/16-in, shot 365 qts 3040-3155 ft.

Yoakum County—Ownby: Shell's Ownby 2, c sw ne sec 502, elev 3564 ft, pump 147 bbls oil, 17.7% wtr, 1500 gals acid 5220-5388 ft, td 5399 ft.

Yoakum County—Wasson: C. U. Bay et al's Lynn-Story (Humble) 1, 440 ft out se cor sw sec 770, pump 208 bbls oil, 3½% wtr, 11,000 gals acid 5037-5185 ft, td 5200 ft.

WEST TEXAS WILDCATS

Andrews County—Failure: DeKalb Agricultural Assn.'s University 2-E, c ne sw sec 5, blk 6, elev 3099 ft, anhydrite 2200 ft, salt 2220 ft, Yates 2320 ft, Yates gr 2350 ft, brown lime 4560 ft, San Andres 4880 ft, abnd 5510 ft.

Mitchell County—Failure: W. S. Guthrie et al's Soloman 1, c sw se H&TC 21, blk 97, elev 2264 ft, abnd 4045 ft.

WEST TEXAS NEW PAY TEST

Crane County—Sand Hills Discovery: Gulf's W. N. Waddell et al 45, 554 ft out sw cor

PSL 27, blk B-26, offset 4478-4605-ft, producer, elev 2653 ft, flow 11,741 bbls 35.2-gr, 975/1, 1400-90 lbs, porous lime 3150-90 ft, td 3230 ft.

WEST CENTRAL TEXAS

Eastland County: Jack Chamberlain et al's Seale 1, nw ne ne H&TC 44, blk 4, abnd 1542 ft.

WEST CENTRAL TEXAS WILDCAT

Jones County—Discovery: Merry Bros. & Perini-Alder Oil Co.'s W. D. Hawthorne 1, 330 ft out nw cor 120-ac tr, blk 3, J. W. McKissick sur No 204, elev 1717 ft, pump 10 bbls 40-gr oil, 50 bols wtr, 3000 gals acid Upper Hope 2533-40 ft, td 2722 ft, pb 2548 ft.

SOUTH CENTRAL TEXAS

Caldwell County — Dunlap: Ellmag Oil Corp.'s Jim Pierce 1, 345 fr nwl 1925 fr swl 100-ac lse, Solomon Seal Lge, AB-24, Navarro 2008 ft, Austin 2075 ft, bs chalk 2290 ft, Eagleford sh 2290-2325 ft, Budali 2325 ft, abnd 2382 ft.

SOUTHWEST TEXAS

Jim Hogg County—Jones: Sun's Jones 3, 4000 fr wl 12,280 fr sl, Agua Nueva de Abajo Gr, 44,322-ac lse, gas sd 4184-4233 ft, perf 56 shots 4215-22 ft, est 600,000 gas, 25 gals cond, ⅛-in, td 4673 ft.

Jim Hogg County—Weil: Sun's Weil Bros. 9, 1604 fr el 8114 fr sl Palitos Blancos Gr, 25,733-ac lse, elev 468 ft, 5½-in 5052 ft, perf 5046-49 ft, pump 115.26 bbls 46-gr, 9/64-in, 1948/1, td 5071 ft, pb 5052 ft.

LaSalle County—Washburn: Quintana Pet. Corp.'s South Texas Synd. 30, 1625 fr sl 3430 fr el, T. W. House sur 61, elev 453 ft, sd 5118-23 ft, shly sd 5480-5595 ft, abnd 5708 ft.

Starr County — Boyle: W. L. Goldston's Carruth et al C-1, 330 fr nl 3471.4 fr wl sh 1-B, porc 91.92 in Josefa Benavides Porc 91, abnd 4132 ft.

SOUTHWEST TEXAS NEW PAYS

Duval County—Muralla Extension and Pay Discovery: Taylor Ref. Co.'s Sepulveda 1-A, 660 fr nw&swl, Jauan A. Ruiz sur 12, 160-ac lse, Pettus 4652-59 ft, new pay 3862 ft, 5½ 4705 ft, perf 24 shots 3862-67 ft, flow est 16,000,000 gas, td 4705 ft.

Duval County—Thomas Lockhart Discovery: Pan American Prod. Co.'s Elizabeth Parr 1-D, 2254 fr wl 1046 fr nl GH&H RR sur 115, elev 388 ft, Pettus 4660 ft, Cole 3271 ft, perf 24 shots 3282-87, 3271-76 ft, Thomas pay 3948 ft, perf 15 shots 3965-70 ft, pump 95 bbls 34.9-gr, 13% wtr, 5/32-in, td 4910 ft.

SOUTHWEST TEXAS WILDCATS

Duval County—Failure: Bridewell's Taft Est. 1, 495 fr sl 2145 fr el 320-ac lse, 495 fr s&wl ne¼, J. Pointevent sur, abnd 5995 ft.

Starr County—Failure: George Boyle's F. S. Guerra 1, (owdd) 1930 fr nwl 10,160 fr swl tr 5, porc 110, elev 345 ft, otd 1300 ft, abnd 1821 ft.

Webb County—Failures: Dulup Oil Co.'s J. G. Garcia 3, 1033 fr wl 947 fr nl blk 34, sec 592 Killam subdvn, Los Ojuelos Gr, sd 1848-50, 1866-68, 2167-69 ft, abnd 2178 ft.

O. W. Killam's Bruni 66, e lot 35 blk 1, Mariano Arispe Gr, sd 3483-3500 ft, abnd 3500 ft.

Webb County — Discovery: Phillips - Texas Gulf Prod. Co.'s Bruni Est. 1, 330 fr nwl 1650 fr swl, 100-ac lse, Sh 3, Jose V. Borrego Gr, Carrizo-Wilcox 4962 ft, perf 4962-72 ft, 5½ 7297 ft, est 2,250,000 gas, 25 bbls cond, 49.8-gr, 7/16-in, 75,000/1, td 8513 ft.

LOWER TEXAS COAST

Jackson County — Mayo: Louis Crouch's Rodesnay 3, 560 fr nel 1400 fr wl, J. Rambo sur 10, dual comp, sand 5078 ft, perf 5078-80 ft, 126 bbls 24.9-gr, 5/32-in; sand perf 5518-20 ft, flow gas, no gauge, td 5556 ft.

Jackson County—W. Ranch: Humble's M. H. Toney B-1, 6289 fr nw alg nel Toney tr fr e cor w bank Lavaca River, th 648 swly at ra on 496.8-ac "B" lse, Ramon Musquez Gr, 121.62 bbls 30.7-gr oil, 1% wtr, ⅛-in, td 5738 ft.

Jim Wells County — Seeligson: Magnolia's A. A. Seeligson 56, 660 fr el 8580 fr sl A. Ramirez Gr, 20,887.4-ac lse, elev 118 ft, dual comp, perf new pay zone 4647-52 ft, pump 324 bbls 40.5-gr, ¼-in; sand 5500 ft, perf 5512-16 ft, pump 252 bbls 38.7-gr, ¼-in, td 6140 ft.

Magnolia's A. A. Seeligson 57, 660 fr el 9000 fr sl, A. Ramirez Gr, 20,887.4-ac lse, sand 4620, 5950-80 ft, 5½ 6055 ft, perf 4654-57 ft, pump 11 bbls, 7/64-in, td 6100 ft.

Karnes County—Hobson: Seaboard Oil Co.'s Kunkel 1, 500 fr n&wl 131.82-ac lse, Don Erasmo Seguin Gr AB-10, abnd 4398 ft.

Kleberg County—Seeligson: Humble's King Ranch-Cabeza 26, 660 fr wl 3800 fr sl GH&H sur 47, 6420-ac tr, elev 122 ft, perf 5230-38 ft, pump 69 bbls 41.2-gr, ⅛-in, td 5250 ft.

Refugio County—Rooke: Hewit & Dougherty's B. D. Rooke A-8, 555 fr el 770 fr wl 287.87-ac lse, elev 26.3 ft, dual comp, sand 6281-91 ft, perf 6281-89 ft, pump 154 bbls, 5/32-in; sand 7124-59 ft, perf 7156-59 ft, pump 82 bbls, 9/64-in, td 7168 ft.

San Patricio County—Odem: Seaboard's E. T. Bomer 1, 523 fr n&el blk 5-A, Cubage & Miller subdvn, Juan Hart & Sons Gr, ne cor 157.67-ac lse, elev 107 ft, new pay 6775 ft, perf 6781-83½ ft, pump 102 bbls 38.4-gr, ⅛-in, td 6783½ ft.

LOWER TEXAS COAST OUTPOST WELLS

Bee County — Blanconia Outpost: Pure's Mollie Fox 1, 450 fr sl 1475 fr wl 200-ac lse, Michael O'Donnell sur AB-50, elev 86 ft, 5½ 4242 ft, perf 4160-70 ft, flow est 16,000,000 gas, sand 4162-80 ft, td 5460 ft, pb 4175 ft.

LOWER TEXAS COAST NEW PAY TESTS

Bee County — Burnell - Wilcox Discovery: Magnolia's Elizabeth Ingram 1, 2218 fr sl 2945 fr wl, Jas. Richardson sur AB-275, perf 6660-70 ft, slick sand 6654-92 ft, flow est 51,200,000 gas, spray cond, td 7021 ft.

Jackson County—Harmon Discovery: J. A. Gray's W. W. McCrory et al 1, 467 fr s&el 40-ac lse of Stano, lse 1825 fr sl w½ M. L. York sur 22, sand 5398, perf 5398-5402 ft, 5½ 5483 ft, 96 bbls 28.4-gr, 7/64-in, td 5623 ft.

Jackson County — N. Laward Discovery: Amerada's Graves et al 2, 450 fr wl 1330 fr nl blk 11, Pickering Rch subdvn, 120-ac lse, Patrick Scott sur, sd 5818 ft, perf 5818-23 ft, 5½ 6157 ft, 56 bbls 32-gr, 5/64-in, td 8010 ft, pb 5830 ft.

LOWER TEXAS COAST WILDCATS

Brooks County—Scott & Hopper Discovery: Humble's Scott & Hopper 1, 660 fr el 1980 fr sl 28,958-ac lse, ACH&B sur 107, elev 240 ft, dual comp, sand 6584-6605 ft, perf 30 shots 6584-92 ft, flow est 6,000,000 gas; sand 6857-66 ft, 6866-94 ft, perf 6878-87 ft, 178 bbls 41.3-gr, 3% wtr, 3/16-in, 5½ 6912 ft.

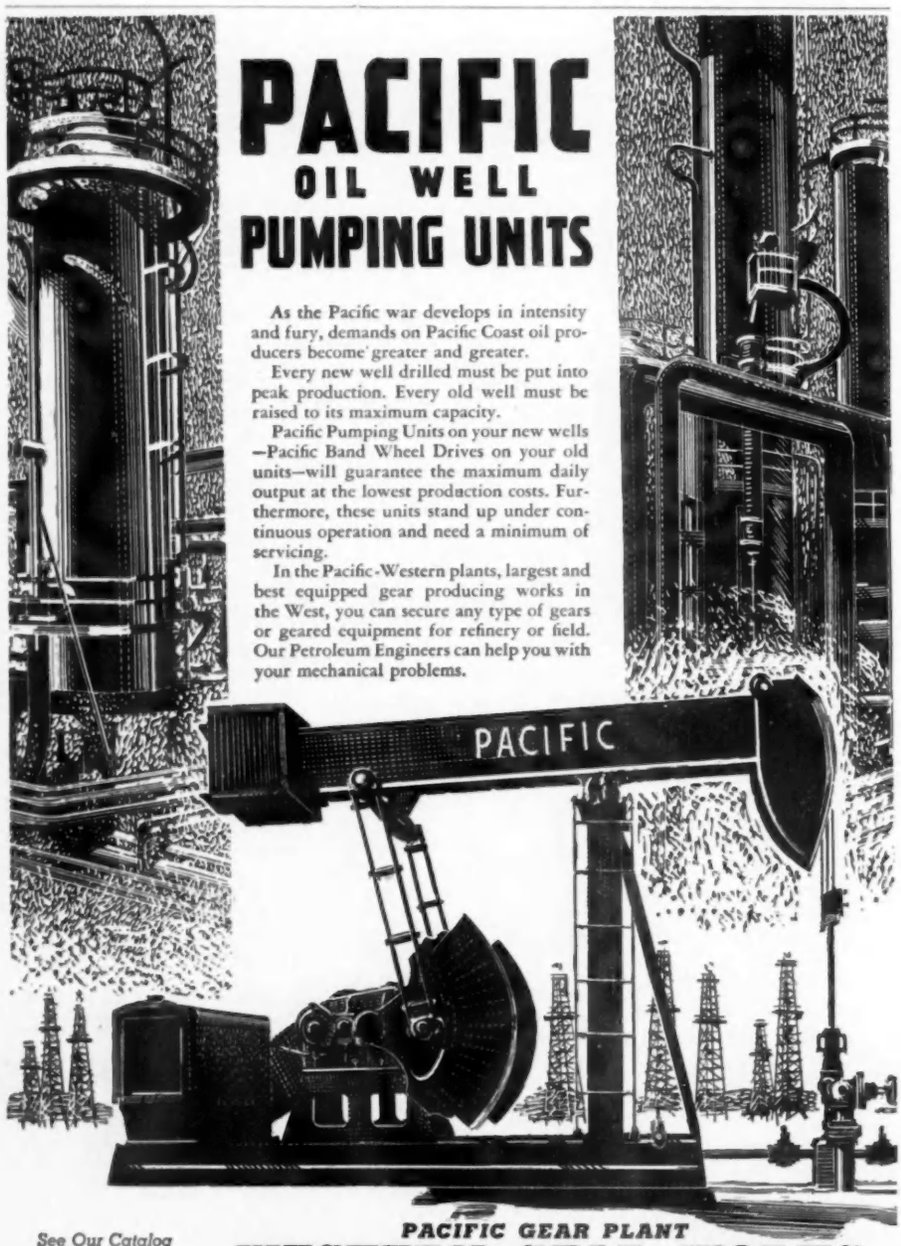
Karnes County—Failure: Continental's Kinnear 1, 330 fr sw&nwl 91-ac tr 40-ac lse, Brooks & Burleson sur 3, elev 409.4 ft, abnd 8516 ft.

Refugio County—Failure: Fred Wood et al's Frank Zarsky 1, 600 fr s&wl 155-ac lse ne por sec 45, Johnson & Pugh subdvn Bonnie View Rch, Guadalupe Cobian Gr, abnd 6505 ft.

TEXAS PANHANDLE

Gray County: Magnolia's Darsey 6, se nw sw ACH&B 27, blk I, elev 3032 ft, abnd 2975 ft.

Moore County: Phillips' Ebling-McDowell 5, AB&M 18, blk M-16, abnd 3208 ft.



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TEXAS GULF COAST

Brazoria County — Danbury: Humble's Blakely 5, 330 ft fr el 330 ft fr sel sec 11, Hooper & Wade sur, 7342-ac tr, 5½-in 5780 ft, perf 5651-65 ft, 108 bbls, ¾-in, td 5800 ft.

Fort Bend County — Blue Ridge: Phillips' Robinson 3, sw flank, lot 16, 293-ac tr, Hicks Shropshire sur, 5½-in 4480 ft, pump 5 bbls, td 4588 ft.

EAST TEXAS

Anderson County—Long Lake: Tide Water-Seaboard's Monnig 14, 2240 ft wel (river) 6200 ft snl, S. Sanches sur No 1-11, flow 150 bbls, ¼-in, Woodbine perf 5248-56 ft, td 5259 ft.

EAST TEXAS NEW PAY

Franklin County—New Hope Discovery: Tide Water-Seaboard's Campbell 1, 440 ft out sw cor 89½-ac tr, John Maximillian sur, dual prod, elev 407 ft, massive anhydrite 7112-7260 ft, Bacon 7254 ft, Hill 7384 ft, Gloyd 7516 ft, Young 7671 ft, Pittsburg 7845 ft, Travis Peak 7950 ft, flow 259 bbls, 9/64-in, 261/1, Bacon perf 7260-78 ft; flow 205 bbls 53-gr 9/64-in, 1689/1, Travis Peak pay perf 8156-90 ft, td 8707 ft.

EAST TEXAS WILDCAT

Wood County—Failure: Hunt Oil Co.'s Kennedy 1, 467 ft fr m/w/nl, 1100 ft fr m/w/el, A. C. Walters sur, elev 442 ft, Pecan 2570-2750 ft, Austin 4000-4160 ft, Woodbine 4475 ft, Georgetown 5175 ft, Goodland 6300 ft, Paluxy 6366 ft, 1st Glen Rose 6744 ft, abnd 6771 ft.

NORTH TEXAS

Clay County: F. H. Gohlke et al's Bilbrey 1-C, 150 ft fr nwl 613 ft fr nel lot 3, Wiley Wyatt-F. Longario sur, abnd 1195 ft.

Clay County—Joy: Consolidated's Meyers 5, 330 ft nsl 2484 ft ewl, C. Thompson sur A-444, Miss 5860 ft, flow 1200 bbls, ¾-in, 3600 gals acid 5860-6037 ft.

Clay County — Ross: Continental et al's Williams 1-A, 4650 ft snl 4400 ft wel, Wm. Walker sur, pump 117 bbls, 7 bbls wtr, Strawn 4050-64 ft.

Jack County — Weir: Continental's Cooper 1-A, 370 ft snl 330 ft wel, S. R. Perry sur A-471, abnd 2350 ft.

Montague County — Hildreth: Continental's Middleton 1-A, 1258 ft nsl 1315 ft wel, E. T. Ry. sec 53, Bend 6123 ft, Barnett 6400 ft, flow 1349 bbls, ½-in, perf 6160-86 ft, td 6450 ft.

Montague County — Illinois Bend: R. C. Lipscomb et al's Harmon 3, 1543 ft snl 1140 ft wel, W. C. Winters sur A-842, abnd 4774 ft.

Seitz-Comegys & Seitz's Hoover 1, 330 ft nsl 670 ft wel, M. B. Griffith sur A-294, abnd 4265 ft.

Montague County — Spencer: Continental's Hogue 1, 470 ft s 330 ft e of sw cor, E. Green sur, but in T. Owens sur A-581, pump 61 bbls, liner perf 2714-24, 2752-2800 ft, shot 45 qts 2757-92 ft, 100 qts 2752-2800 ft, td 2809 ft.

Throckmorton County: Coleman & Estes' McKeichan 4, 900 ft nsl 150 ft wel sec 4, C. I. R. sur, abnd 651 ft.

Wichita County: Magnolia's Goins 13, 959 ft nsl 1020 ft ewl blk 29, Red River Valley Lands, pump 2 bbls, 1824-27 ft.

Wichita County—K-M-A Ellenburger: Christie-Hickman Dr. Co.'s Bolding 11-E, 330 ft nsl 610 ft ewl blk 23, KWVFL, KMA 3655 ft, Miss 4127 ft, Ellen 4152 ft, flow 504 bbls, 2-in, 4000 gals acid 4163-4203 ft.

Young County: Elliott Production Co. - J. Nunnelee's C. A. Oxford 1, 467 ft nsl 1480 ft ewl, J. R. Baker sur A-56, pump 68 bbls, shot 80 qts 2988-3032 ft.

Chas. B. King et al's Perkins 10-A, 800 ft wel 600 ft nsl of w-120 ac n½ sec 206, TE&L Co. sur, pump 3 bbls, 737-43 ft.

C. A. Lupton-J. McLester's Hardether 1-a, 740 ft snl 467 ft wel sec 4, S. L. Ribble sur A-2225, Palo Pinto 848 ft, Marble Falls 3985 ft, flow 1512 bbls, ¼-in, sand 3985-4003 ft.

W. F. Palmer et al's Campbell 1-G, 986 ft ewl 558 ft snl sec 1484, TE&L Co. sur, pump 10 bbls, 880-887 ft.

W. F. Palmer et al's Campbell 2-G, 559 ft snl 586 ft ewl sec 1484, TE&L Co. sur, abnd 922 ft.

Trumter Pet. Co.'s Clark 8-B, 500 ft ewl 450 ft snl sw¼ sec 218, TE&L Co. sur, pump 10 bbls, 855-61 ft, td 930 ft, pb 861 ft.

NORTH TEXAS WILDCATS

Archer County—Failure: Hedrick Oil Co.'s Brockheuser 1, 1110 ft snl 200 ft wel sec 87, blk 4, Clark-Plumb sur, abnd 1105 ft.

Young County Discovery: A. G. Bedner et al's T. D. Finley 1, 467 ft s 1000 ft w ne cor of s-152.8-ac of sec 6, J. Poitevent sur A-2074, elev 1173 ft, flow 35 bbls oil, 2 bbls wtr, ½-in, 5000 gals acid Bend 3940-80, 4035-50 ft, td 4113 ft.

Young County — Failure: Paul Atchley et al's Gilbert 1, 1800 ft nsl 1200 ft wel sec 221, TE&L Co. sur, abnd 1007 ft.

WYOMING WILDCAT

Fremont County—Failure: W. H. Barber's Redbreast 1, ewl ne se 11-32n-99w, Dallas dist, abnd 1355 ft.

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United States Wildcat Starts

ARKANSAS

Columbia County: Crescent Drilling Co.'s Cooley 1, c nw se 5-17-20, w of Magnolia field.

Ouachita County: Davis Rubber Co.'s Farris 1, c se ne 27-14s-15w, lcn.

Pope County: Stanolind's Maxwell 1, 660 n&w of se se 18-8s-18w, lcn.

Union County: John C. Schmidt's Mary Pyron 1, 660 s 480 w of ne cor se se 21-17-14, lcn.

Yell County: Lion Oil's Cusetta 1, 35-17s-24w, mim.

CALIFORNIA

Fresno County: Seaboard's S. T. 1-28, nw nw nw 28-14-17, North Kerman area, rig.

Kern County: Butler Bros.'s 2, 660 ft s 330 ft e nwc 14-27-27, Poso area, lcn.

Richfield's Tejon B-14-36, sw sw nw 36-11-19, Tejon Ranch area, lcn.

Standard's 6-6, se se nw 19-29-29, N. Edison area, rig.

Standard's 10-2, sw ne ne 19-29-29, N. Edison area, lcn.

Superior's Houghton 36-35, sw nw sw 35-29-26, Strand area, rig.

Orange County: Gen. Pet. Corp's Comm. 14-1, sw nw sw 7-3-1, Norwalk area, lcn.

San Bernardino County: Chino Hills Oil Co.'s Kraemer 1, sw nw sw 33-2-8, Chino area, mim.

San Luis Obispo County: W. C. Duffie's Dolley 2, ne sw se 31-31-13, Arroyo Grande area, lcn.

Ventura County: Wilshire Oil Co.'s Petit 1, se nw se 9-3-20, South Mt. area, lcn.

ILLINOIS

Franklin County: Nat'l Assoc. Pet. Co.'s Old Ben Coal Co. "U" 1, sw sw ne 16-5s-2e, lcn.

Gallatin County: B. K. Leach et al's B. C. Goforth 1, nw nw sw 27-7s-10e, lcn.

Hamilton County: Gulf's McGeath 1, ne ne se 17-4s-5e, lcn.

Kingwood et al's T. A. Parker 1, nw se ne 6-6s-6e, lcn.

Jefferson County: Magnolia's C. C. Dewitt 1, nw nw nw 16-2s-3e, lcn.

Richland County: Sun's Wright-Schmitt 1, nw nw se 25-2n-14w, lcn.

St. Clair County: W. R. Braun's Munier 1, sw se se 27-1s-8w, dr.

KANSAS

Barton County: Helmerich & Payne, Phillips, Nadel & Gussman's Frederick 1, 15-16s-11w, dr 25 ft.

Ellis County: Nelson Drilling Co.'s Fischer 1, se se nw 9-11s-20w, dr 2800 ft.

Reno County: Ohio's Collingwood 1, 12-26s-7w, dk.

Rice County: Colorado Pet.'s Minnie Boldt 1, nw se ne 20-18s-9w, dr 1725 ft.

Saline County: Huber & Franco Central's A. N. Nelson 1, ne ne se 29-15s-1w, lcn.

Stafford County: Phillips' Thole 1, nwc 23-23s-12w, lcn.

Phillips' Hartnett 1, sw sw ne 13-24s-13w, lcn.

KENTUCKY

Butler County: G. P. Gill's Askew 1, 6-G-33, lcn.

SOUTH LOUISIANA

Assumption Parish: Phillips' Amelia 1, West Amelia area, 13-16s-13e, lcn 11,000-ft test.

Iberia Parish: Texas Co.'s State-Bay 2-C, South Tigre Lagoon area, s 80° 31 mins 22 secs w 32,230 ft fr USCGS Mon "Club" in Vermilion Bay T-14s-5e, lcn 11,500-ft test.

MICHIGAN

Clare County: C. W. Teater's Thompson 1, n½ ne sw 26-19n-5w, rig.

Osceola County: Sun's Richardson 4, s½ ne nw 23-18n-9w, rig.

NEW MEXICO

Lea County: Culbertson & Irwin et al's Burch-Texaco 1, c se se 15-19s-34e, lcn 5500-ft test.

Texas Co.'s W. H. Baskin 1, c se se 22-19s-33e, elev 3623 ft, mim 5500-ft test.

San Miguel County: T. J. Weller et al's Sparks 1, c se sw 18-15n-13e, lcn.

OKLAHOMA

Kay County: Deep Rock's Humphries 1, ne se se 12-25n-1w, lcn.

Lincoln County: J. J. Fleet's Moore 1, sw nw se 21-17n-2e, Cushing 1050 ft, Foraker 1150 ft, Grayhorse 1220 ft, Stonebreaker 1330 ft, Bird Creek 1480 ft, Deer Creek 1630 ft, Hoover 1680 ft, dr 2198 ft.

Noble County: Fox & Fox's Curby 1, se se 22-24n-2w, mir.

Oklahoma County: Kerlyn's Olmstead 1, c e se nw 12-14n-3w, dr 5280 ft.

Pottawatomie County: Texas Co.'s McLaughlin 1, nw ne sw 32-9n-2e, c&p.

Stephens County: Amerada's Ray Wood 1, sw ne se 17-1n-8e, lcn.

Texas Co.'s Cooper 1, sw sw sw 16-2n-8w, c&p.

Washita County: Gulf's Shields 1, se nw se 11-8n-20w, c&p.

WEST TEXAS

Dickens County: A. M. Leftwich et al's C. D. Bird 1, 1320 ft snl 990 ft ewl H&GN Ry. 289, blk 1, spd and sd.

WEST CENTRAL TEXAS

Jones County: C. H. Brodie, Tr's C. T. Derrick 1, 1361 ft snl 330 ft ewl T&P 58, blk 18, lcn 3000-ft test.

Taylor County: Northern Ordnance's Toombs 1-a, 330 ft snl 298 ft ewl se, S. P. Ry. 12, blk 9, skid mach.

LOWER TEXAS COAST

Bee County: Navarro Oil Co.'s T. M. Plummer 1, 660 fr s&wl sw sw Plummer subdvn, lcn 7250-ft test.

Jim Wells County: Bridewell's J. T. Cosner 1, 660 fr el 633 fr sl lot 7, blk 2, Adams-Presnall fm tr 502.54-ac lse, Los Presenos de Arriba Gr, lcn 5600-ft test.

Southern Minerals Corp.'s John Luby 1, 467 fr wl 3008 fr nl Sh 2 on 941.12-ac lse, Los Presenos de Abajo Gr, lcn 6000-ft test.

Live Oak County: W. Earl Rowe's Elam-Verna Williams 1, 660 fr nw&nel ely 80-ac lse of 381-ac tr, John McMullen sur AB-30, 4600-ft test, bldg dk.

Nueces County: Hewit & Dougherty's Selma Mumme 1, 467 fr ne&sel lot 12 Sh 8, Gallagher subdvn Bluntzer Lands, Casa Blanca Gr, 300-ac lse, elev 115 ft, lcn 6500-ft test.

Victoria County: P. A. Ogg's H. W. Dodd 1, lot 24, Brown & Dodd subdvn, Agapito de Leon Gr AB-63, lcn.

G. W. Strake's Tom O'Connor, Jr. et al 1, 1000 fr sel 1500 fr nel IRR Co. sur 27, 4000-ac lse, elev 110 ft, lcn 4500-ft test.

SOUTH CENTRAL TEXAS

Atacosa County: Humble's Pruitt et ux 2, 4620 ne alg projected line fr se cor. A. M. Lockwood tr, th 1980 se at ra to lcn, J. Poitevent sur 11, 7000-ft Edward lime test.

Bexar County: O. R. Mitchell's Fee 1, 1050 fr nl 440 fr el of 1069-ac tr, Jose Angel Navarro sur, lcn 1900-ft test.

SOUTHWEST TEXAS

Duval County: Taylor Ref. Co.'s Atlee Parr D-2, 805 fr el 1000 fr nl SA&MG RR sur 117, lcn 5000-ft test.

Webb County: Phillips' A. M. Bruni Est. 1 (Leyendecker), 3775 fr nel 1558 fr nwl 2000-ac lse, J. V. Borrego Gr, lcn 7500-ft Wilcox test.

TEXAS GULF COAST

Colorado County: Shell's Hill State Bank 1, 3½-in mi sw Rock Island, 745-ac lse, W. K. Paulding sur, lcn 11,200-ft test.

Houston County: John S. Ivy & W. T. Moran's Murray & Sons 1, 642-ac tr, John Durst sur, 22 mi sw Crockett, lcn 6000-ft test.

Matagorda County: Ohio Oil Co.'s Heffelfinger & Hermanson 1, 296-ac tr, P. Burnett sur, 4 mi ne Blessing, lcn 9900-ft test.

EAST TEXAS

Robertson County: V. P. Allen et al's D. C. Bolton 1, 360 ft fr nwl 480 ft fr nel of m/e 50-ac tr, J. M. Viesca sur, 6 mi se Franklin, mim 1500-ft test.

Upshur County: Hunt Oil Co.'s A. W. Tucker 1, 660 ft out nw cor of 101 1/3-ac tr, Chas. Dungombe sur A-146, mim 6000-ft Paluxy test.

NORTH TEXAS

Archer County: Fortex Oil Corp.'s C. L. Abercrombie 1, 1000 ft snl 50 ft ewl sec 98, blk 4, Clark-Plumb sur, lcn 1250-ft test.

Fortex Oil Corp.-H. B. Dudley's W. P. Ferguson 1, 300 ft snl 880 ft ewl blk 9, R. McKim and KWVFL sur, lcn 1850-ft test.

E. R. Perkins et al's L. Frerich 1, 935 ft nsl 300 ft wel sec 66, blk 3, Clark-Plumb sur, lcn 2000-ft test.

Clay County: Sussex Oil Co.'s H. W. Perkins 2, 1250 ft snl 765 ft wel sec 80, Byers sur, lcn 1200-ft test.

Young County: C. W. Coppock et al's Fred Thompson-Kilpatrick 1, 550 ft out ne cor sec 1446, TE&L Co. sur, lcn 1200-ft test.

Northern Ordnance's F. H. Robertson 1, 1350 ft nsl 5015 ft ewl, F. L. Green sur A-105, lcn 5000-ft test.

Halliburton Organizes Colombian Subsidiary

The by-laws of the Compania Halliburton de Cementacion y Fomento, of Venezuela, have been accepted for recording in Colombia, and capital stock has been issued. Joe Morgan Pruitt is acting as manager for the service company in Colombia.

Squeaks from the Bull Wheel

Following Directions

"I was embarrassed when I found you sitting on Paul's lap."

"Why, mother, that's what you told me to do."

"Told you what?"

"You said if he ever got too smart, to sit on him."

Goodness Me!

"There's a certain reason why I love you."

"My goodness!"

"Don't be absurd."

Foresighted

We're gonna have a swell time tonight, Hon. I've got three seats for the movies.

What do we want with three seats?

One for your Pop, one for Mom, and one for your kid brother.

As He Saw It

The teacher was attempting to explain the meaning of words.

"Now," she said, "let us suppose there was a cat here and I gave it a saucerful of milk, which it drank. Then I gave it another saucerful, and it drank it all. But when I gave it a third saucerful it would only drink one-half of it. We can then say that the cat had sufficient. Now, Tommy, what is the meaning of sufficient?"

"It means a catful of milk."

Cure

"Your wife used to be terribly nervous. What cured her,"

"The doctor told her that her kind of nervousness was the natural result of advancing age."

What She Wanted

"I want a round trip ticket."

"Yes, lady. But where to?"

"Back here, of course."

★ AVOID USELESS WRAPPINGS! ★ ACCEPT SIMPLER PACKAGING! ★
PAPER
PACKS A WAR PUNCH!
FIGHT WASTE!
★ SHARE THE PRINTED WORD! ★ MAKE EACH PIECE STRETCH! ★

Small Pebble—Big Beach

An old Cockney was asked if he was not scared when a bad blitz was on. "No, guv-nor," was the reply. "Can't say as I am. Yer see, I count me chances. Jerry—well he's got to take off all right, 'asn't he? Then he's got to cross the Channel, that ain't too easy for 'im. Then he's got to git by the coast. Then comes the Thames Estuary, that ain't all he likes. Then comes London—well, he can't miss that; but then he's got to find 'Ammersmith, then Acacia Road, then No. 87, and then most likely I'll be at the pub."

Squelched

Did you reprimand your youngster for mimicking me?

Yes; I told him to stop acting like a fool.

Silly Business

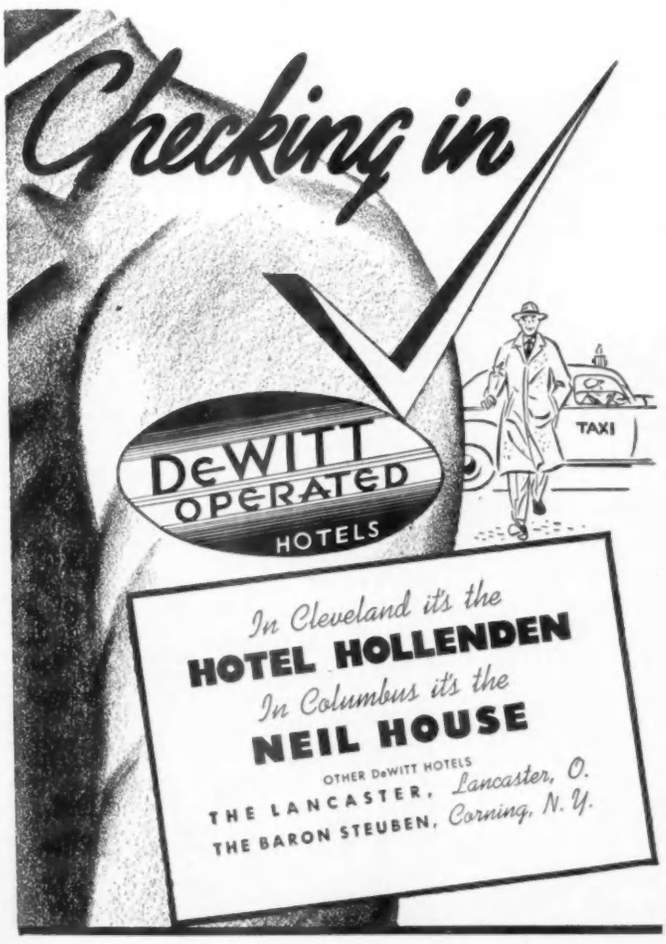
A group of men were having a talkfast around a stove in the corner store. Suddenly someone burst in and shouted, "McGuire, your house is on fire!"

One of the men, highly excited, broke out of the store and ran down the street. After covering six blocks, he dug his heels into the sidewalk and came to a dead stop. "What the heck," he remarked, "my name ain't McGuire!"

Her Fatal Fault

A politician became enamored of a beauty of the stage, and danced attendance upon her at numerous parties, sporting events and first nights. At length deciding to marry her, he took the wise precaution of having her investigated by a detective agency.

In due course came a report saying



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that the young woman's character and antecedents had been subjected to careful scrutiny, and summing up its findings:

"Miss J—— possesses a reputation beyond reproach. Her past is spotless. Her associates, with one exception, have been people of the highest quality. That exception is a local politician of doubtful character with whom she has been much seen in recent months, and whose continued company can only serve to bring irreparable injury to her reputation."

Pidgin

"Doctor, what time you fixee teeth for me?"

"Two-thirty, all right?"

"Yes, tooth hurty, all right, but what time you fixee?"

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STANDCO BRAKE LINING
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Letters to the Editor

Favors Subsidy

DEAR SIR:

As a producer of oil, some being flush and some being stripper production, I would like to make a few comments on the article by Mr. Joseph Gordon, former chief economist for the PAW, which appeared in the February 14 issue of THE OIL WEEKLY.

The article, "Subsidy Would Mean Gross Misuse of Funds or Huge Bureaucracy," was an appeal to the prejudice most of us have against subsidies and too many government bureaus. The purpose was a hold-out for a general price raise as against the compromise offered by OPA.

The economics of producing oil is not one picture, as presented by Mr. Gordon and the PAW, but rather it is several pictures, as I will illustrate.

Our firm last year produced about 250,000 barrels of oil. The average cost was 96 cents per barrel, which includes: depreciation, 11 cents; depletion, 9 cents; overhead, 4 cents; gross production taxes, 5 cents; and direct costs, 67 cents; but no discovery cost is included. Now, by grouping our leases into four general classes and figuring the costs by classes, one gets an entirely different cost picture.

Class 1. We had 22 wells, flowing and pumping, which were capable of making the allowables set by the railroad commission, and these wells produced 138,796 barrels at a cost of 52 cents per barrel.

Class 2. We had 64 wells, better than stripper wells, but not restricted by proration. They produced 51,065 barrels at a cost of 76 cents per barrel.

Class 3. We had 123 wells on leases classed as strippers which produced 19,101 barrels at a cost of $1.11 per barrel.

Class 4. We had 610 wells on stripper leases being repressured with air or gas or by waterflooding, which produced 76,601 barrels at a cost of $1.86 per barrel.

Note this sequence: 52 cents; 76 cents; $1.11; and $1.86.

Any economist can look at these figures and see that in order to keep producing oil that costs $1.11 and $1.86 per barrel, there must be a price raise or a contribution by the government. Otherwise 300,000 wells of the 407,000 in this country will have to be shutdown for the duration, or perhaps plugged and abandoned permanently.

Aware of this prospect, Stabilization Director Vinson agreed to a price raise for stripper production and asked PAW to work out the necessary procedure. PAW answered that it could not be done. Mr. Gordon in his article gives the reasons: it would be impossible to define a stripper well, or a wildcat well; that it would mean gross misuse of government money, a huge bureaucracy, and eventually the destruction of private enterprise. It is the OPA, not the PAW, that is working out the subsidy procedure for stripper oil.

PAW is advised by the Petroleum Industry War Council, and these gentlemen come from the great major companies and the few independents who own most of the non-stripper well production in this country. Nearly four million barrels per day, or 85 percent of the total, is classed as non-stripper production. They are the people who oppose subsidies and favor a general price raise as the only solution.

Now let us examine their true prejudices on subsidies. When the situation arose which required oil to be shipped east and north by rail at a greatly added cost, the PAW worked out the plan whereby the government paid the added cost. It is reported that Defense Supplies Corporation paid the great Eastern refiners over one-quarter billion dollars in such freight "claims." More recently the corporation announced plans for paying freight "claims" to Mid-Western refiners for oil shipped from West Texas; for example, paying 82 cents per barrel for oil shipped from Midland, Texas, to Chicago; $1.06, to Mt. Pleasant, Michigan; $1.08, to Toledo, Ohio; and 84 cents to Whiting, Indiana.

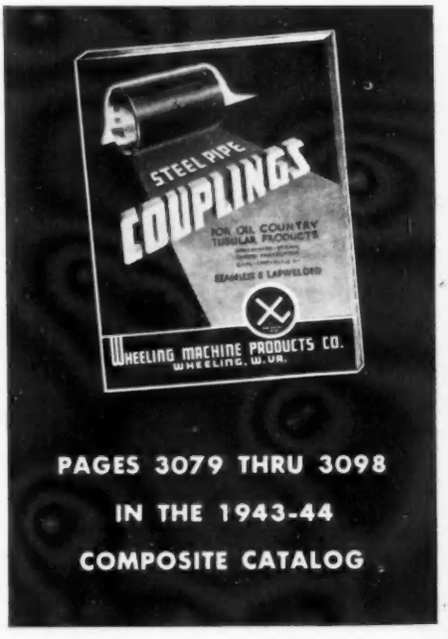
As to added wartime costs, the stripper producers are in the same situation the refiners were in. They are in the same situation the stripper copper producers were in. The government needed the copper very badly and quickly solved the copper problem by offering and paying a subsidy for copper produced from lean ore—sometimes as much as twice the going price for copper.

It is fairly evident that this country does need the 675,000 barrels of stripper production. It is also fairly evident that the government intends to "hold the line." Then, to me, the only solution is a subsidy for stripper production.

As for wildcatting, it is true that if you add a discovery cost of 35 cents per barrel to my cost figures for producing Class 1 and Class 2 production, there is not much profit for wildcatting. But here I will agree with Mr. Gordon that it would be almost impossible to arrange and administer on a sound basis a government subsidy for wildcat drilling. I think this, like the construction of great new highways, can well wait until after the war.

P. C. DEAN

Dean Bros.,
Geologists & Oil Producers,
Fort Worth, Texas



PAGES 3079 THRU 3098
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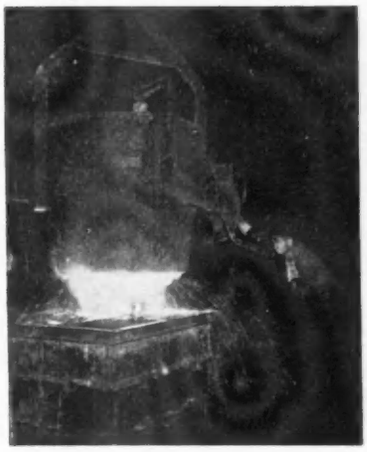

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Notes for the Equipment Buyer and User

Orifice Union

CLAYTON MARK & COMPANY

Clayton Mark & Company, Evanston, Illinois, has introduced a new screwed orifice union.

In this union the orifice plate and steel-jacketed asbestos gaskets are set

Orifice Union

in a groove, in solid steel to safeguard against blowing of gaskets and resultant trouble. The union is recommended for 600 pounds steam, or 2000 pounds cold working pressure. It is applicable in all fields where flow control of steam, gas, air and liquids, is a problem.

Wire-Rope Clamp

NATIONAL PRODUCTION COMPANY

National Production Company, Safe-Line Clamp Division, 5008 St. Jean Avenue, Detroit 13, Michigan, announces the safe-line wire-rope clamp.

The clamp is made of high-tensile strength alloy steel forgings coined to accurate dimensions.

The clamp consists of two parts. The inside of each half is made to fit the rope. The large grooves pocket the large

Safe Line Wire Rope Clamp

spiral strands; the small grooves pocket each small wire that makes up the strand. The large grooves hold the rope from end-wise slippage and the small grooves prevent the rope from spiral winding out of the clamp. Every strand and every surface wire of the rope contacts the full length inner surface of the clamp. The two halves are gripped tightly on the ropes with strong alloy steel nuts.

In operation the two taper threaded sections which are placed on the exposed sides of the wire rope, are squeezed together in a vise-like grip when the two taper nuts are tightened.

The clamp is made in sizes ranging from 1/16 inch to 3/4 inch.

Valve Selection Chart

Reading-Pratt & Cady Division American Chain & Cable Company, Bridgeport, Connecticut, has published a new valve selection chart designed to help select the right valve for the job.

By a simplified breakdown of conditions to consider when selecting, and an explanation of what these conditions determine in the operation of a valve, the chart offers the valve buyer a "slide rule" for valve selection. An example is given which uses the facts brought out in the chart for selecting the right valve for a specific condition.

Federal Steel Products Buys Dedman Foundry

The Dedman Electric Steel Foundry, Houston, has been purchased by the Federal Steel Products Corporation, also of Houston.

There will be no change in the personnel. H. W. Dedman will continue as manager. The plant is now employing approximately 260 men producing electric steel castings for the oil field trade as well as casting for the Navy, Ordnance and Maritime Commission. At present they are producing approximately 450 tons of castings per month.

The new company plans to expand its capacity to be in a position to serve the rapidly increasing demand for oil field castings to manufacturers of oil field equipment in the Southwest. As the new company has no products of its own, the entire steel casting tonnage is delivered in the unmachined stage.

The company also announces that John L. Blair, who was formerly with the Dedman Foundry & Machine Company, has returned from Boston, Massachusetts, to manage the steel foundry. He is already well known to the trade in this territory.

Plant to Manufacture Pipe Coating at Houston

Wailes Dove-Hermiston Corporation, Westfield, New Jersey, is completing a new plant at Houston for the manufacture of bitumastic pipe coating. The plant is located at 7002 Clinton Drive, is of fire-proof construction, and contains modern, up-to-date manufacturing equipment and a control laboratory.

Olsco Changes Houston Address

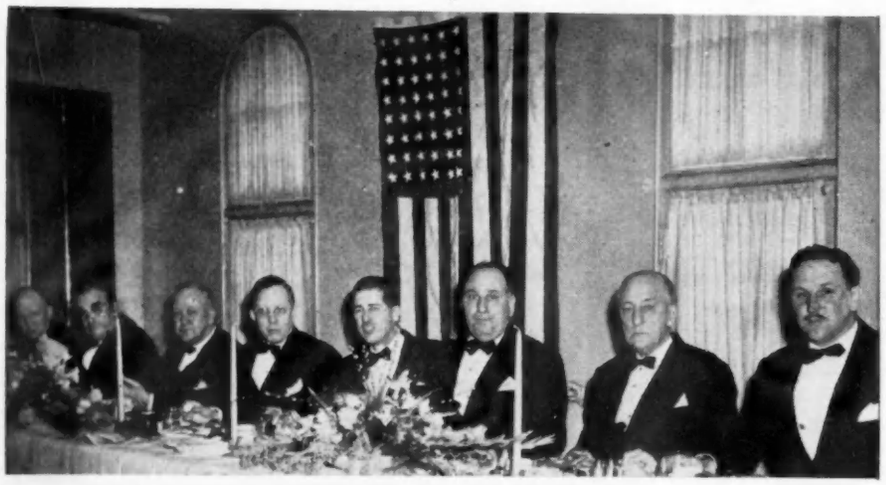
Olsco Sales & Service Company announces a change of address from 917 Second National Bank Building, to 2015-C, West Gray, Houston, Texas.

Hard Metal

Haynes Stellite Company, Kokomo, Indiana, has a booklet entitled "Operating Information on Stellite 98M2 Cobalt—Chromium-Tungsten Turning and Boring Tools and Milling Cutters." The publication is intended to help users obtain the best possible results with 98M2, the cast cobalt-base alloy which was developed especially for faster machining of steel.

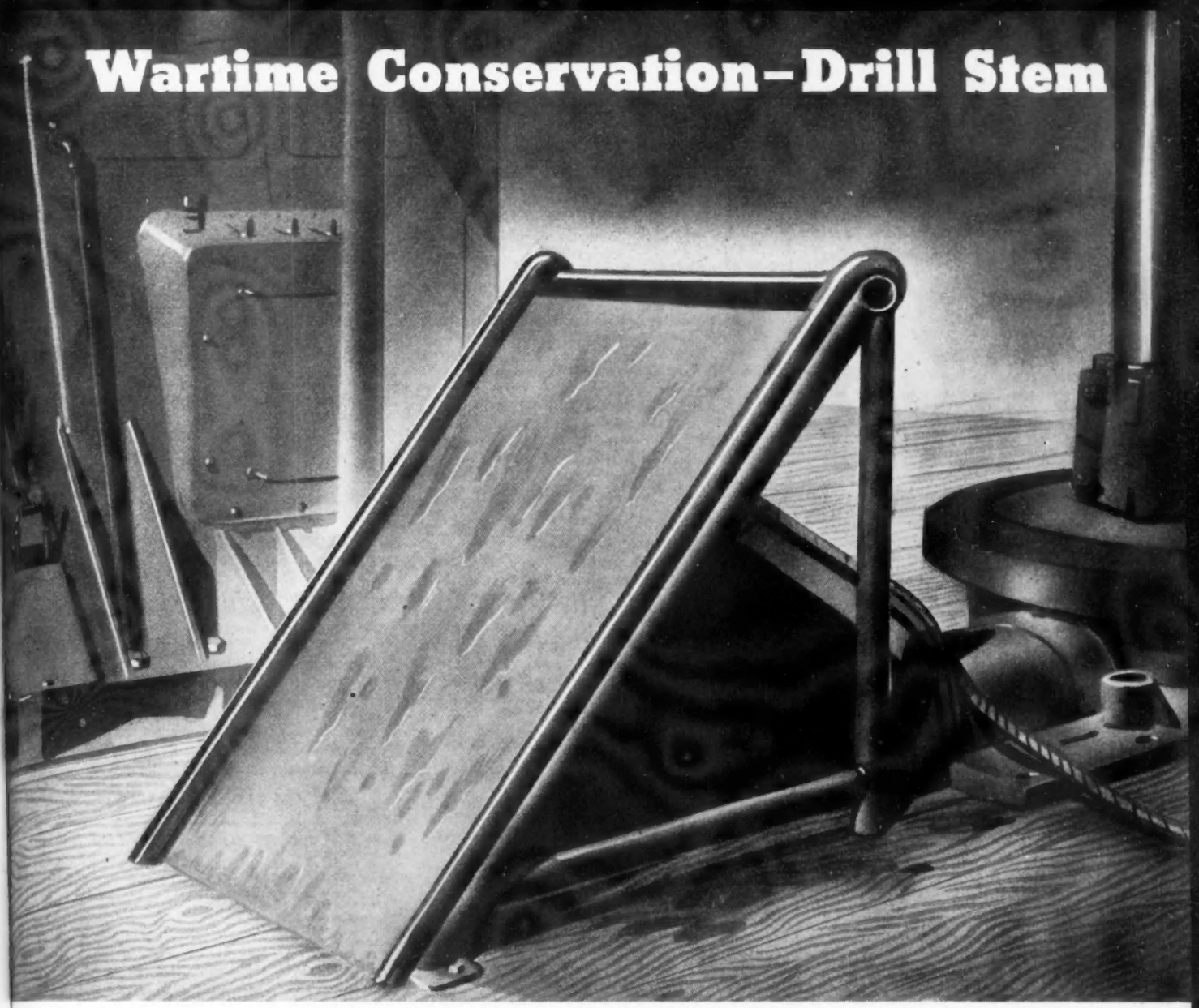
Chain Drives

Chain Belt Company, 1600 West Bruce Street, Milwaukee 4, Wisconsin, has published a booklet on "Wartime Care of Chain Belt Drives." The booklet gives information on maintenance, lubrication and repair of chain belt drives.



Tulsa Chapter Nomads celebrating their annual dinner meeting, February 14, at the Tulsa Club. Seated, left to right: C. O. Willson, regent, Oil & Gas Journal; Fred E. Cooper, Allis-Chalmers Manufacturing Company; A. G. Bailey, Fred E. Cooper Company, sergeant-at-arms; Paul E. Fitzgerald, Dowell Inc., regent; W. G. Green, Engineering Laboratory; G. W. Walton, Clark Brothers Engine Company, president; H. M. Cosgrove, Mid-Continent Purchaser, secretary-treasurer; D. R. Davis, U. S. Rubber Company, speaker; Shep Miers, Southwest Supply Company, vice president, not in the picture.

Wartime Conservation—Drill Stem



Information supplied by the "Oil Weekly"

Most stands of pipe, when dragged onto the derrick floor from the rack, are guided up a slide to floor level, but they're left to swing across to the rotary table and, unless carefully snubbed or checked, may strike the table with damaging impact.

By providing a second slide at the rotary table, the box end of the incoming joint is guided away from the rotary table and auxiliary equipment and into the direction of direct lift. The pin end, swinging free as it clears the edge of the floor, is caught by the slide and likewise guided upward as the traveling block rises, the top of the guide being high enough to insure that the free-swinging pin end will clear the box of the drill string already held in the slips of the rotary table.

Side rails, of split or flattened pipe, prevent side travel of the ends of the drill-stem joint, and aid in protecting the adjoining equipment, as well as curbing irregular lifting of the pipe.

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ORBIT VALVES

Orbit Wing Valve

ORBIT WING VALVE

This valve is especially designed for Wing Service. Made in 2" size only in both flanged and screwed ends. Opening through valve is 1⅛". Seats of cast Stellite J Metal.

YOUR ORBIT VALVES
will last for the duration. Meanwhile, if you have any questions regarding their care or maintenance, write us.

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SINCE 1912

TULSA, OKLAHOMA

Men in the Industry's News

DR. MARSHALL KAY, Columbia University, will give a talk on "Geosynclines in Continental Development," before the Illinois Geological Society, which will hold a dinner meeting at Mattoon, Illinois, March 8. The meeting is in the series sponsored by the Distinguished Lecture Committee.

M. JAKE BONHAM, assistant division land man for Continental Oil Company, has been transferred from Fort Worth to Tyler, where he will be district lease man. George Ely, who has been stationed at Midland, will be geologist for the district. Bonham will be succeeded at Fort Worth by W. A. Rounds of Houston.

IRA CRAM, assistant chief geologist of The Pure Oil Company, Chicago, reviewed the history of the Cumberland field, Oklahoma, as guest speaker at the February 28 meeting of the Fort Worth Geological Society.

E. H. RAINWATER, stratigrapher with Shell Oil Company, has been transferred from Houston to Tallahassee, Florida, to do oil exploration work in the Southeastern States.

C. E. BURT has become vice president and assistant general manager of Grant Oil Tool Company, Los Angeles, California, following the recent merger of Sorensen-Burt Manufacturing Company, with Grant Oil Tool Company. He has been associated with the oil business in various capacities for the past 23 years. His work will be devoted to developing new production and cementing tools and methods.

HOWARD JOHNSON, formerly chief scout for The Texas Company at Tulsa, has been promoted to secretary to the company's Tulsa division manager. He is succeeded as chief scout by Wilson Metcalfe, formerly South Oklahoma district scout at Ardmore, Oklahoma, for The Texas Company.

ERLE P. HALLIBURTON, president of Halliburton Oil Well Cementing Company, has announced his candidacy for Republican national committeeman from Oklahoma, opposing Lew Wentz, who has announced he will be a candidate to suceed himself.

JOE H. EUSTICE has been promoted to general manager for W. C. Norris Manufacturer, Incorporated, Tulsa. He formerly was sales manager. Succeeding him in the latter position is Ray Sexton, former assistant sales manager. Both men have been with W. C. Norris for a number of years.

J. H. Eustice

Ray Sexton

H. C. ALLINGTON has been appointed sales research engineer for Wickwire Spencer Steel Company, with headquarters in New York. He will be in charge of the development and expansion of markets for the company's products with particular emphasis on the oil fields.

PAUL LYONS, chief scout for Stanolind Oil & Gas Company, Tulsa, has been re-elected general chairman of the Mid-Continent Oil and Gas Association's standing committee on oil field nomenclature. Paul Potter, chief scout for Shell Oil Company, Tulsa, was named general vice chairman while W. R. Thawley, chief scout for Gulf Oil Corporation, Tulsa, was retained as chairman of the Oklahoma steering committee.

J. E. O'DONNELL, pioneer California oil operator, died February 24 at Santa Maria, California. Although in his seventieth year, he was still active, supervising the drilling of one of his wells on a Santa Maria property.

It has been claimed that he drilled one wildcat for every two of the long string of producers he completed. O'Donnell wildcats figured importantly in the development of several of the greater California fields, notably Torrance, Whittier and Los Cerritos.

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